

American Gas *Association* MONTHLY

Tulsa Natural Gas Convention

Scientific Approach to Sales

Gas Air Conditioning Standards

Industrial Gas Service Rates

Gas Cooking Methods Superior

April



1939

VOLUME XXI NUMBER 4

A. G. A. RATE SERVICE

This Service, published in loose-leaf form, contains over 500 pages of complete and accurate information relative to gas rate schedules throughout the country. The volume is kept up-to-date at all times by supplementary sheets issued at frequent intervals, incorporating changes in gas rates as they occur.

THE RATE SERVICE CONTAINS:

1. Complete gas rate schedules in effect for practically every community in the United States and its Possessions, Canada and Newfoundland, together with data on kind and heating value of gas supplied.
2. Complete list of gas companies with names of communities supplied by each company.
3. List of gas companies having special rates for water heating.
4. List of gas companies having special rates for house heating.
5. A tabulation showing all communities in which therm rates are now in effect and the names of companies serving these communities.

Subscription price, including Supplements:

\$10.00 per year to Members

\$25.00 per year to Non-Members

**AMERICAN GAS ASSOCIATION • 420 Lexington Avenue
NEW YORK, N. Y.**


**American Gas
Association**
MONTHLY

C O N T E N T S F O R A P R I L 1 9 3 9



Maytime is natural gas time in Tulsa, Oklahoma, or at least it will be this year when natural gas men from all parts of the country flock to the southwestern metropolis to keep pace with this fast-growing industry. Chairman Weymouth, Secretary Poe and their co-workers have prepared comprehensive programs, with not a few surprises in store for the visitors. . . . The real feature in this issue is the first part of a sales symposium to which a dozen sales leaders have so generously contributed. Six articles are in this issue with more to follow in May. They represent a most significant contribution to sales thought in the gas industry. . . . There is nothing like a combination of scientific testing and practical experience to demonstrate the superiority of gas cooking. Mr. Beebee's article blasts some popular misconceptions with devastating effect. . . . The introduction of the Gasco Installation Guide by Mr. Morehouse is timely and worth careful attention. . . . C. F. deMey, chairman of the Rate Committee, speaks with authority in his article on industrial gas rates. It's a subject of major importance and Mr. deMey presents a penetrating analysis.

PAGE	
123	Tulsa Natural Gas Convention Offers Many Attractions..... E. H. POE
127	The Science of Selling . . . A Sales Symposium Atlanta Gas Light Company Portland Gas & Coke Company The Manufacturers Light & Heat Company Zenith Gas System, Inc. Houston Natural Gas Company Boston Consolidated Gas Company
134	Gas Cooking Excels—Test Experience Proves Consistent Superiority..... A. M. BEEBEE
137	Standards for Installing Gas Winter Air Conditioning..... H. P. MOREHOUSE
140	West Coast Showmanship..... RUTH DORRIS
143	Personal and Otherwise
145	Affiliated Association Activities
146	Convention Calendar
147	Spring Accounting Conference Offers Constructive Program
149	Gas Heating Equipment Available for New Homes..... H. LEIGH WHITELAW
151	Practical Rates for Industrial Gas Service..... C. F. deMEY
153	Going Ahead with Industrial Gas
154	Distribution Committee Presents Strong Program for Annual Conference April 17-19
155	Proposed Method of Studying the Operation of a Carburetted Water Gas Machine..... LEON J. WILLIEN
157	Testing Laboratories Now Produce Synthetic Coke Oven Gas..... H. F. BUTZE
160	Personnel Service

SUBSCRIPTION · \$3.00 A YEAR

Published eleven times a year by the American Gas Association, Inc. Publication Office, American Building, Brattleboro, Vt. Publication is monthly except July and August which will be a bi-monthly issue. Editorial Offices, 420 Lexington Avenue, New York, N. Y. Address all communications to American Building, Brattleboro, Vermont, or to 420 Lexington Ave., New York, N. Y. All manuscript copy for publication should be sent to the editorial offices in



New York. The Association does not hold itself responsible for statements and opinions contained in papers and discussions appearing herein. Entered as Second Class Matter at the Post Office at Brattleboro, Vermont, February 10th, 1922, under the Act of March 3, 1879.

Cable Addresses: American Gas Association
AMERIGAS, NEW YORK
American Gas Association Testing Laboratories
AMERGASLAB, CLEVELAND



To take the best in industrial and commercial gas equipment directly to the customer while he's in a planning mood, these American-Gas-Association-sponsored displays at various national expositions during 1938 played to over 121,000 persons in the restaurant, metal, hotel, power and mechanical engineering fields. They covered 6,616 square feet of floor space and included approximately 150 major pieces of gas-fired equipment.



JAMES M. BEALL, *Editor*

SPOTLIGHTING NATURAL GAS ... Tulsa Convention Offers Many Attractions

STRIKING to the heart of natural gas problems, the annual convention of the Natural Gas Section of the American Gas Association, meeting in Tulsa, Okla., May 8-11, will present an interest-packed program to the industry. Hailed a few years ago as a young giant because of its phenomenal growth and vitality, the natural gas industry has continued to expand. It has forged ahead with new customers, new markets and new methods.

These developments will be evaluated and discussed by leaders both from within and without the folds of the industry. Highlights of the program presented in this article reveal many compelling reasons for attendance. Advance registration indicates that hundreds will flock to Tulsa to keep a first-hand check on the pulse of the industry.

Those attending the convention will find that Tulsa has unexcelled facilities, unlimited and unrestrained hospitality, convenient concentration of first class hotels, a modern and strikingly interesting business district, and many other elements necessary to make their visit enjoyable.

*

Located in Tulsa are the Oklahoma Natural Gas Company, Public Service Company of Oklahoma and the Central States Power and Light Corporation and, at Bartlesville, Cities Service Gas Company and C. E. Burlingame Properties, Inc. These and other natural gas companies in Oklahoma are making big plans for visitors during the convention.

Symbolizing the undying spirit of this metropolis of petroleum and natural gas, its skyline is one of the crown jewels of the Empire of the Southwest. Modern skyscrapers, ever clean because Tulsa's fuel is natural gas, stretch into the sky out of the rolling hills in tremendous tribute to early pioneers who built a city of beauty on the banks of the Arkansas River.

We haven't the space in this issue to tell you all of the history of the host city, its Indian history or the hun-

By E. H. POE

Secretary, Natural Gas Section

dreds of anecdotes of its pioneers, of the beauty and the aggressiveness in its trade territory or its important position in the world of petroleum and natural

gas. You must come to the convention and hear and see for yourself. The Mayo Hotel will be the headquarters.

The four-day program includes many innovations. In addition to the comprehensive general sessions program, there will be sessions devoted to accounting practices, domestic gas sales, industrial gas sales, management, technical and research activities, production and transmission subjects, accident prevention and employee education.

*

Thomas R. Weymouth, vice-president, Columbia Gas & Electric Corp., New York, and Elmer F. Schmidt, vice-president, Lone Star Gas Co., Dallas, who are chairman and vice-chairman, respectively, of the Natural Gas Section, will preside at the general sessions.

Speaking on the "Activities of the Natural Gas Industry" at the opening general session, Tuesday morning, Mr. Weymouth will set the keynote of the convention. With a background of many years of experience in the natural gas industry, his remarks are expected to be of major interest. Following Mr. Weymouth on the program, Baird H. Markham, director of the American Petroleum Industries Committee, will present a timely and important address on "Business Relationship with Government."

Wednesday's general session presents Edward R. Guyer, president, Association of Gas Appliance and Equipment Manufacturers, and vice-president, Cribben & Sexton, Chicago; George E. Frazer, counsel, A.G.A.E.M.; Louis Ruthenburg, president, Servel, Inc.; William A. Dougherty, counsel, Standard Oil Company (New Jersey), New York, and Conrad N. Lauer, president, American Gas Association, and president, The Philadelphia Gas Works Company.

In their addresses these speakers will deal with improvements in gas appliances, with the history of business regula-

tion, with problems of management and employee, with recent court rulings in relation to the natural gas industry and, finally, with the great possibilities for further advancement of the industry.

On Thursday, Alexander Forward, managing director, American Gas Association, will tell the convention "What We Have at Headquarters." P. McDonald Biddison, consulting engineer of Dallas, will speak on "Fair Value and Fair Return."

P. C. Lauinger, president of *Oil and Gas Journal*, will show that "Advertising Is Good Business," that it is good not only for cosmetics and tooth paste but also for the whole natural gas industry. His connection with an out-

standing oil and natural gas magazine guarantees a valuable contribution to the program. Following this address S. E. Whiting, vice-president and Chief engineer, Liberty Mutual Insurance Co., Boston, will speak on "Engineering and the Human Equation."

Management Symposium

Management is a specialist's job and five specialists have been selected to present their ideas on the subject on Tuesday afternoon. On the agenda are such subjects as "Telling the Story of the Company to the Public," "Engineering Assistance to Management," "Sales Direction in Company Management," "Home Service—The Tool of Management," and "Management—

Its Responsibility." The speakers are Will C. Grant, director of public relations, Lone Star Gas Co.; A. W. Ambrose of Cities Service Gas Co., Bartlesville; C. I. Weaver, president of The Ohio Fuel Gas Company, Columbus, Ohio; Jessie McQueen, A. G. A. home service counsellor, New York, and Paul Taylor, vice-president, Stone & Webster Service Corp., New York.

Preceding the above stimulating program will be the presentation of prize-winning essays by contest winners. Two subjects—"The Duties of a Local Manager" and "The Duties of a District Manager,"—will be covered. This is an innovation in these convention programs.

To Interpret New Account Classifications

The Accounting Section's session on Monday morning, under the direction of Chairman F. W. Peters, Oklahoma Natural Gas Company, will cover three subjects as timely as the date and as important to natural gas accounting men as next month's pay check.

"The Effect of the New Classification of Accounts on Natural Gas Production Accounting" will be weighed by L. L. Dyer, Lone Star Gas Co., Dallas; "Property Reserves," a big item any way you look at it, will be discussed by F. B. Flahive, Columbia Gas & Electric Corp., New York; and "Customer Deposits" will come in for analysis by Oakah L. Jones, Oklahoma Natural Gas Co., Tulsa. Special viewpoints are required in each of these fields—so experts will do the talking.

Summation of "Accounting Section Activities and Organization" will be handled by H. A. Ehrman, Chairman, A. G. A. Accounting Section, and assistant to secretary, Consolidated Edison Co., of New York, Inc.

Everyone is invited to join in at the luncheon roundtable where questions will be asked and answers will come flying back at a fast clip.

"A Show Will Let Them Know"

This might well be the slogan of the whole convention, but it happens to be the subject of an address to be presented by Harry Swenson of The Peoples Gas Light & Coke Co., Chicago, at the domestic gas sales conference. F. X. Mettenet, chairman, Commercial Section, and vice-president,



Oklahoma Natural Gas Company Building



The skyline of Tulsa where the Natural Gas Convention will be held May 8-11

The Peoples Gas Light & Coke Co., Chicago, will preside.

At this same meeting F. M. Houston, chairman of the Domestic Gas Range Committee, will discuss up-to-the-minute gas appliance advertising, or how the Rangers are riding to a triumphant victory in the CP Range sales. The title is "CP Range Sales and the Ranger Organization."

There is considerable need for a practical, workable plan that will enable dealers to secure financing for gas appliance sales. Information along this line will be passed on to the convention by Percy Hall, vice-president of the Manufacturers Trust Co., New York.

Management Asks—Home Service Answers

Home Service has the floor on Wednesday afternoon under the leadership of Chairman Mildred Clark, Oklahoma Natural Gas Co., Tulsa. Such home service leaders as Helen Hatcher, Memphis Power & Light Co., Hulda Ungericht, Ohio Fuel Gas Co., and others have a great many answers—in fact they have answers to questions that management has not yet asked.

The domestic gas sales conference continues at the Thursday luncheon under the leadership of Joseph Bowes, president, Oklahoma Natural Gas Company. The tempo of the meeting will be as accelerated as the fast-moving sales ideas of the four speakers. Many new sales promotion ideas will be contained in short talks by

W. G. Wiegel, advertising manager, Lone Star Gas Co.; John H. Warden, Oklahoma Natural Gas Co.; R. S. Agee, sales promotion manager, A.G.A.E.M., and Mr. Mettenet.

A Day of Headliners in Industrial Sales

George Rowland, Cities Service Gas Co., Bartlesville, Okla., will lead off the industrial gas sales conference on Monday on the vital point of the "Possibilities and Effects of Oil Industry Loads upon Gas Company Earnings"—something worth thinking about in natural gas areas. M. A. Reagan, United Gas Pipe Line Co., Wichita Falls, Texas, and Frank S. Kelly, Jr., Arkansas Louisiana Gas Co., Shreveport, La., will follow up with discussions of Mr. Rowland's paper.

Getting down to the matter of specific markets for industrial gas, Charles R. Bellamy, chief engineer, Columbia Gas & Electric Corp., New York, will advise, from his vantage point as 1939 chairman of the Industrial and Commercial Air Conditioning Committee, on "Reaching the Summer Air Conditioning Market Through the 1938-39 Developments in Gas Equipment." To add thoughts from the local territories, O. A. Kinzer, Lone Star Gas Co., Dallas, L. O. Vogelsang, San Antonio Public Service Co., San Antonio, and Carl H. Dean, Oklahoma Natural Gas Co., Tulsa, will be on deck.

Another booming natural gas market—gas engines—will be analyzed by D. W. Reeves, Oklahoma Natural Gas

Co., Tulsa, and 1939 chairman of the Gas Engine Power Committee. Manley H. Clark, Southern Counties Gas Co., Los Angeles, is scheduled to extend the points in subsequent discussion.

For the industrial gas luncheon address an outstanding executive has been chosen to speak on a subject that means bread-and-butter to every hard-hitting industrial gas man in the business. Walter C. Beckjord, vice-president, Columbia Gas & Electric Corp., New York, will interpret how "Management Views the Growing Industrial Gas Load."

The afternoon session will be devoted to industrial sales techniques. Advice on "Approaching Gas Sales from a Salesman's Standpoint Rather Than an Engineer's" will be offered by Charles F. Henness, manager of industrial gas sales, Public Service Co. of Northern Illinois, Chicago. Comment after the formal address will be made by F. Marion Chelf, Public Service Co. of Colorado, Denver; Karl Emmelring, The East Ohio Gas Co., Cleveland; and Edwin Snook, Amarillo Gas Co., Amarillo.

And, finally, to wind up the session with a national and overall note, Frank H. Trembley, Jr., The Philadelphia Gas Works Co., and chairman of the Industrial Gas Section, will outline and evaluate the "Importance of the Industrial Gas Section's Function to the Industry."

Emphasis on Technique

J. H. Dunn, general manager, Shamrock Oil and Gas Co., Amarillo, pre-

sides over Monday's production conference. Results of the continuous research carried on in the industry will be described at this meeting. C. K. Eilerts and M. A. Shellhardt of the Bureau of Mines, Amarillo, have some new data to present under the title of "An Equilibrium Cell That Provides a Precision Means of Evaluating the Dew Point of the Mixture of Hydrocarbon Fluids as Produced from Wells."

The Monday afternoon session presents papers of particular interest to all production engineers—"The Feasibility of Recycling Gas from High Pressure Gas Reserves" and "New Uses for Cement in Completing and Reconditioning Gas Wells." The speakers, who are authorities in their fields, are Jack Vaughn, Tidewater-Seaboard Oil Co. and C. P. Parsons, vice-president, Halliburton Oil Well Cementing Co., Duncan, Oklahoma.

Transmission

If you are interested in dehydration and resultant effects on carrying capacity, latest developments in pipe coating methods, or unusual problems faced in the operation of pipe line operation, the transmission conference with its Monday session, including a morning, luncheon and afternoon meeting, will supply you with many new ideas.

Reginald Burdick, chief engineer, Southern Natural Gas Co., Birmingham, has encountered some unusual problems in pipe line operation which he will discuss at the luncheon meeting. Mechanized equipment for the maintenance of pipe lines will be described by I. W. Wheatley, Cities Service Gas Co., Bartlesville.

John Clark, Hope Natural Gas Co., Clarksburg, W. Va., will present a paper on the "Resultant Effects of Dehydration on Pipe Line Carrying Capacity." Discussion will follow by three men who are specialists in this field: W. M. Deaton, Bureau of Mines, Amarillo; C. L. Brockschmidt, Mississippi River Fuel Corp., and H. H. Ross, Gas Producing Co., Newark, Ohio.

Aubrey Boyd, Lone Star Gas Company, Cayuga, Texas, in describing "The Foreman's Place in His Community," will indicate what a vital part the foreman plays in the development of good will.

Employee Education—Accident Prevention

The employee education session, Monday morning, and the accident prevention conference in the afternoon will be presided over by C. L. Hightower, safety director, United Gas Pipe Line Co., Houston.

Paul J. Hubbell, personnel director, Phillips Petroleum Co., will speak of the "Need for Job Training and Methods Best Adapted to a Well-Rounded Program." L. K. Covelle, director of vocational education, Oklahoma Agricultural College, Stillwater, will follow up Mr. Hubbell's address with a discussion of the facilities available for vocational education.

The general employee meeting, the group conference and the supervisor's meeting will all be discussed at the accident prevention conference in relation to their value in the accident prevention program. Charles Miller, Texas

Company, Houston, and Harry Markee, Phillips Petroleum Co., Bartlesville, are well equipped to handle this subject. "The Public Liability Problem in Connection with Domestic and Industrial Sales and in the Operation and Maintenance of Mains" will be discussed by L. B. Denning, Jr., vice-president, Community Natural Gas Co., Dallas.

"The Importance of Investigation of Employee Personal Injury Accidents" closes this session. Problems of who should investigate accidents, methods of investigation, and the investigation of near and minor accidents are timely subjects to be discussed by R. L. Conway, Jr., United Gas Pipe Line Co., Houston; Hadley Myers, Sinclair Companies, Tulsa; and Robert Huffman, Oklahoma Natural Gas Co., Tulsa.

See the May issue of the A. G. A. MONTHLY for a Who's Who of the program speakers.

Employees Get Detailed Report on Company's Operations

FOLLOWING the mailing of the annual report to stockholders, the Consolidated Edison Company of New York and its subsidiary companies for the first time have mailed to the homes of its employees a 16-page elaborately illustrated analyses of the companies' operations. "Our Company and Our Business" is the title of the report which gives an admirable picture of the factors affecting the workers' jobs.

A large part of the report is based on a break-up of the average dollar of revenue received by the companies in 1938. It shows the largest share going to labor, 29.4 cents, with the second largest going to tax collectors, 21.3 cents, with coal, supplies, etc., taking 19.2 cents, interest on borrowed money 7.9 cents, depreciation 7.8 cents, leaving for dividends on the preferred and common stocks and for surplus, 4.5 cents, 9.5 cents and 0.4 cents, respectively.

"The employee desires to have a steady job," the report declares. "He wants wages based on the work done and large enough to assure a decent standard of living. He expects in return to give his best effort, working efficiently and loyally to contribute to the profit of the enterprise and the success of its service. The record shows that they have maintained a desirable standard of working conditions and hours of pay. It shows that the employees receive at least as good wages as are paid in other industries for similar work and in many cases higher."

In discussing the subject of taxes the report points out that the sum set aside for

the tax collectors for 1938 was a high for all time. If the pay of the average weekly employee, \$36.89 a week, were taxed at the same rate as the companies, the tax collector would take \$7.90 and leave the employee \$28.99 to live on. It is pointed out that nearly \$4,000,000 was paid by employees and the system companies for social security taxes. This amount is about five per cent of the total wages paid in 1938, and is approximately \$11,000 a day.

"Stress is placed on the matter of taxes because in such amounts they become a grave concern not only to the management and stockholders of these companies but also to the employees of the companies," the report says. "You can spend a dollar only once. The dollar of revenue which has to go for taxes cannot be given up in rate reductions, it cannot be spent for wages or for dividends."

There is a chart in the report comparing 1938 with 1929. This comparison shows that taxes have doubled, the average wage of the weekly employee has increased from \$31.58 a week to \$36.89 a week, and dividends paid on the common stock of Consolidated Edison have decreased from \$3.25 a share to \$2.00 a share.

Must Have Gas

I know of one large manufacturing industry that would be crippled if it had not a constant supply of gas. That industry is engaged solely in the manufacture of electric light bulbs.

—W. B. McLUSKY

The Science of Selling . . . A Symposium of Modern Gas Sales Plans and Policies

- The American Gas Association, through national advertising, sales contests, regional conferences, home planning activities, architects' and builders' programs, and other cooperative undertakings, is attacking the sales problems of the gas industry nationally. Most important, however, is how local companies are making these national programs effective; how they are actually selling gas service to their customers.
- Herewith is presented the first part of a symposium on the sales policies and practices of a representative group of companies. Each of these programs is based on long experience. They, along with the practices of hundreds of other companies in the industry, represent the intelligent, progressive sales policies that are the keystone of the industry's progress.
- These papers, and others to follow, are a significant contribution to sales thought. They may be read with profit by all in the industry. More complete information on specific parts of each program may be obtained from the company involved. The second part of the symposium will appear in the May issue.



By
J. W. Lea
Commercial
Manager

Atlanta
Gas Light Co.
Atlanta, Ga.

"WE DON'T SELL HALF AS GOOD AS WE KNOW HOW"

WHILE turning over in our mind the various factors involved in such a discussion as this is intended to be, we are reminded quite forcefully of a story about a book salesman and a farmer. The book salesman approached the farmer with the proposal that the farmer purchase a set of books, between their covers being all the knowledge necessary to successful and extremely profitable operation of a farm. The farmer's almost unanswerable reply was, "Stranger, them books wouldn't help me a bit, 'cause I don't farm half as good as I know how now."

Some of the statements which we

will make in describing our practices and policies will of necessity be statements of ideals toward which we are striving and all too often falling short. We firmly believe, however, that some degree of success will always attend that gas company's sales department whose entire personnel is out there selling as "good as it knows how now," and buying an occasional book to learn a little more.

In our domestic sales organization we have found that a good domestic salesman rarely ever comes to us looking for a job. We have, therefore, set up an apprentice system wherein we always have on hand in training an ap-

prentice or junior salesman for every six or eight senior salesmen. These apprentice salesmen are generally young, single men, high school graduates at least, who are living at home and who show some promise of becoming good salesmen. They work for us on a straight commission, although we do guarantee them a living wage for the first three months while they are spending a great deal of their time in training.

Our floor salesmen work on the floor entirely and are paid a salary. This is usually the next step in the training of a junior salesman before he is given a territory. Our territory men operate in a closed territory and are paid a nominal salary plus a commission. They are paid a commission on all appliances sold by the company and installed in their territory regardless of whether or not they actually closed the sale. By reason of this practice they are not reluctant to send prospects into the store to examine appliances. Most of the time, of course, they meet their prospects on the floor, but quite often prospects having been encouraged to come in, do come in to the store and buy appliances before they get out.

Our regular domestic men sell all classes of appliances from ranges to

house heating as opposed to the system of having special crews selling one appliance only. This policy was determined on the basis that a higher type of man would be attracted to our sales force by the extra earning possibilities of selling all major appliances. It might be possible to sell more refrigerators, for instance, by having special refrigeration salesmen who would handle only refrigerators, but we believe that other major appliances would suffer because the earning possibilities of the territory men would be lessened and less effective men would then be attracted to or held in our organization.

House Heating Department

Since house heating does require a certain amount of highly specialized knowledge, we have a House Heating Department whose function as far as residential sales are concerned is almost entirely the engineering of heating jobs. Engineers in the House Heating Department supply the territory salesmen with all engineering studies necessary for selling residential heating. In addition to this function the House Heating Department handles directly the sales of heating gas to apartments and stores where no processing gas is involved. Heating in industrial plants where process use of gas is involved is handled by the Industrial Department.

Our residential activity follows the so-called campaign idea in which certain appliances are stressed during the time of year in which these appliances are normally bought by our customers, water heaters in the spring and fall, refrigerators in the spring and radiant heaters in the fall. We are constantly trying to improve our so-called "off" months by special campaigns and have succeeded to some extent in this endeavor.

Our sales operations for several years have taken into full consideration the value of other dealers in gas appliances. We feel that it is our job as a utility to create public acceptance of appliances and then promote sufficient dealer activity to carry on the continuous sale of these appliances.

As an example of this policy our company sells no gas boilers or furnaces (floor furnaces excepted). We have achieved a high degree of cus-

tomer acceptance of gas for house heating and all such sales are made entirely by dealers. Our own salesmen give these dealers every assistance in making sales and we pay our own men load bonuses but do not subsidize the heating dealers.

Gas refrigerators, on the other hand, have not yet arrived at a point of complete public acceptance in our city and by far the majority of sales are made directly by our own company salesmen. We are gradually building up enthusiasm among the more stable refrigerator outlets for the gas refrigerator and expect to have sufficient dealer power behind gas refrigerators at such time as people begin to visit appliance stores and ask for gas refrigerators.

In all cases where we are selling appliances directly to our customers we attempt to supply "stimulative" competition and avoid stifling competition. Our men are not permitted to "knock" dealers' products, but are taught to sell gas service and the advantages of the particular make of appliance which they are offering. We avoid as much as possible price cutting

and attempt by example to stabilize prices on gas appliances so that dealers in gas appliances can make a fair and just return on their efforts.

Our general policies all tend toward balanced results and we are getting those results. A year or so ago one of the gas magazines published the sales of appliances per 1000 meters for a number of gas companies and we naturally compared our results with the others. We found that in the period covered, while some other gas companies had sold more of some one appliance than we had, our results were in the money, so to speak, in every one of the major appliances. A company may have sold more refrigerators than did our company, but our sales were ahead of theirs on all other major appliances.

This is the result for which we are striving. We wish to avoid the over-emphasizing of any one appliance, for after all, we are selling gas and not just appliances and the better balanced our gas load becomes, the more profitable it is to us and to our customers and incidentally the easier to sell.



By

R. G. Barnett

Vice-President

and

General

Manager

**Portland
Gas & Coke
Company
Portland, Ore.**

DEALER COOPERATION PLAN ENJOYS REMARKABLE SUCCESS IN OREGON

A HIGHLY workable and satisfactory plan of cooperation with gas appliance dealers, unusual in its fairness and completeness, is the key to the remarkable success of Portland Gas & Coke Company of Portland, Oregon (manufactured gas), in actually building appliance sales and gas load.

Portland Gas & Coke Company operates in the face of the stiffest kind of competition. Its plan of merchandising simply had to work—and the upward trend of appliance sales and gas sales is proof that it is working.

The company's territory is in the

center of the lumbering industry. Great surpluses of wood and sawdust are available for heating. Despite the keen competition offered by cheap wood, sales of gas house heating equipment have risen steadily in the past five years—and a 24-per-cent increase was recorded in 1938 over 1937. Gas house heating customers, of which the company now has 9,200, have increased every year in the past five.

The company's territory in the rich Portland and Willamette valley areas is served by aggressive electric companies with rates that have for many

years been among the lowest in the nation. In addition, the city of Portland is only 40 miles from the \$72,000,000 Bonneville dam, now completed. An abundance of electricity from hydroelectric generating plants and from steam plants operated with wood waste is available.

Despite these competitive factors, gas is still the dominant service for cooking, with more than 60,000 gas ranges in a territory having approximately 100,000 dwelling units. Gas range sales in this territory in 1938 equalled those of electric ranges, although the latter had ten times the advertising background.

Gas is still the major fuel for water heating, with 55,000 tank heaters and 7,000 automatic storage water heaters in operation. A 21 per cent increase in automatic storage water heater sales was registered in 1938 over 1937.

Gas is the dominant service for commercial cooking. The gas company now has the largest total of commercial and industrial customers in its history.

Why is Portland Gas & Coke Company actually making progress in the face of these competitive factors?

John J. Winn, Jr., commercial manager, gives this answer:

"Portland Gas & Coke Company's fundamental objective is to build gas load, but we have learned that only with the gas company acting as a wheelhorse in selling activity can the dealers get as much business as they should have, and the company add load to its lines.

Merchandising for Merchants

"We recognize that merchandising is for merchants and are interested primarily in building the gas appliance sales of the dealers. They have been responsive and cooperative, and are working energetically for gas.

The activity of all those interested in gas sales in this territory is directed through the Gas Appliance Society of Oregon, which

NOT only is modern selling vitally important to modern industrial progress—not only is it the power plant which drives all business forward—but it is also an infinitely complex and intricate operation, one that requires the scientific approach every bit as much as does engineering, manufacturing, or any other technological program.

—WILLIAM E. HOLLER



is composed of dealers, manufacturers and the gas company, with a progressive secretary, J. King Bryon.

"The Gas Appliance Society of Oregon works to solve major problems, to boost sales, to set up fair standards for trade-in allowances, to conduct campaigns, to gain the most from tie-in advertising with the gas company, and to maintain the gas equipment business on an ethical and profitable basis.

"The gas company bears the major load of advertising and promotion and it shoots square with the dealers. They have been quick to respond with 100 per cent cooperation.

"The gas company does not and will not handle any line of appliances exclusively. Gas company salesmen are paid the same amounts on sales they assist a dealer to close as they are on company sales. The primary job of the company's salesmen is to sell the convenience and economy of gas service.

"In many other ways the gas company aids the dealers, working through dealer coordinators who systematically contact dealers to help them with their plans and problems.

"Proofs of all advertising are submitted to dealers well in advance so that they may tie-in, at small expense, with the company's service-selling ads on cooking, water heating and house heating.

"The gas company coordinator works with stores in training salesmen and planning and organizing campaigns. The company's complete and practical sales training course is offered to dealer groups.

"Our home service department is available for the use of dealers for demonstration in their stores or for good-will building. As soon as a dealer sells a range, he sends a card to the company's home service department. A home service representative calls on the customer, praises her choice of dealer and range, shows her how to get the most out of the range, and notes the customer's comments on the card, which is returned to the dealer for his information.

"There are other major phases of our

sales plan. Among the most important is the highly organized activity among members of the gas company organization, with cash bonus payments for prospect leads which result in sales.

"The gas company has 750 loyal employees who are actively working to turn in sales leads. The satisfaction of seeing the company build its gas load is as much of a stimulant to their efforts as is the cash compensation. Leads are followed up promptly and result in a high percentage of sales.

"One of the biggest aids in recent years has been the introduction of the CP range in this territory. Salesmen now have an unequalled gas cookery story to tell.

"The facilities of the company's laboratories and engineering staff are available to the dealers in gas house heating equipment. Estimates on heating costs are prepared by our engineers in cooperation with dealers, and both our salesmen and our engineers work to sell appliances for dealers.

New Home Coverage

"New construction is covered systematically—and more gas house heating equipment is going into new homes in this area than any other type.

"Portland Gas & Coke Company makes full use of bill stickers, campaign booklets, direct mail, window displays, publicity, folders, to sell the story of gas service, with the dealer-directed slogan in every advertisement—see Portland Gas & Coke Company or your dealer."

"As a result of the activity of the Gas Appliance Society of Oregon, five ranges are sold by dealers to two by the gas company—a 100 per cent improvement for the dealers since 1936. There are 44 range dealers in the territory served by the company, with 150 salesmen working full time or part time on gas range sales. This is the largest number of dealers and the largest number of salesmen working to build the gas picture in the society's history. Eight manufacturers have CP models in this territory.

"Almost 100 plumber dealers are selling gas water heaters and about 97 per cent of the plumber dealers in the company's ter-

ritory recommend gas for water heating. Sales of gas water heaters run five to one in comparison with electric water heaters—despite an 8-mill per kw.hr. electric water heating rate. Plumber dealers sell two gas water heaters to the gas company's one. Eight major manufacturers are represented. Roughly, 275 men are active during the spring and fall water heater campaigns sponsored by the Gas Appliance Society of Oregon.

"Competition has developed morale in the gas company's organization, which has carried over to dealers. It's backed up by an excellent service department and helpful cooperation of every division of the company.



By
W. L. Hutcheson
Merchandise
Sales
Manager

PAINT A MODERN PICTURE FOR YOUR GAS PROSPECT

THERE are four distinct lines of endeavor in promoting the sale of gas. Roughly, these would come under the following heads:

1. Gas company full time sales force.
2. Cooperative sales by gas company employees other than the regular sales force.
3. Home service activities.
4. Dealer cooperation.

Each of these activities is important and has its place in the promotion of sales. The activities are not necessarily competitive with each other. A full time sales force of approximately one outside salesman for each 1,000 gas customers is needed for constant contact with our customers.

These customers pay very little attention to developments in gas appliances. Their conception of the gas industry is derived from the appliance which they have in use. If this appliance happens to be twenty years old and entirely obsolete, nevertheless it is this particular customer's picture of the

* This discussion covers the sales policies of the Pittsburgh Group of the Columbia System.

"The 750 persons in dealer organizations and the 750 members of the gas company organization form an effective army of 1500 thinking, talking and selling gas service in this territory. Competitive factors have developed ingenuity, aggressiveness and sounder thinking—all of which bring results in increasing appliance and gas sales.

"Portland Gas & Coke Company is proud of a review of its activities by M. G. O'Hara, vice-president in charge of sales of the Norge division of Borg-Warner Corporation:

"You have the finest merchandising plan of any company in this country, and I believe I am fairly familiar with all of them."

The Manufacturers Light & Heat Company Pittsburgh, Pa.*

gas industry. Whether this customer purchases new equipment or not, it is necessary that we inform him regarding new appliances. He must be made to realize that his present equipment is obsolete, and that all the conveniences of any fuel can be obtained with new gas appliances.

In retaining our present load or promoting additional load we have a distinctly educational job; a job which will require the best efforts of a good salesman in constant contact with our customers. It has been our experience that a salesman will sell more appliances, and maintain better contact, on this size territory than when he has more customers to cover.

Employee Sales

There will probably be ten outside employees for each salesman in an organization. It is true that these employees do not give the attention to sales that is given by the full-time sales force. It should not be expected; however, there are many very capable salesmen among them.

Some of these employees have de-

PARTIES who want milk should not seat themselves in the middle of a field in the hope that a cow will back up to them.

—ELBERT HUBBARD

veloped into our best full-time salesmen when transferred to the Sales Department. These employees will have a great deal of influence among their friends. They will have contacts in some quarters that are superior to those of the salesmen. Many times they will be able to influence a customer through friendship where sales logic means nothing.

Each of these employees should be given an opportunity to learn the sales policies of the company. They should be equipped to defend these policies under any circumstances and to explain modern uses of gas to customers.

Home Service

When a customer purchases a new gas range the transaction is not completed. This customer has undoubtedly been using a gas range for many years. Not being in the business, they paid little attention to the new features. Unless carefully and diplomatically instructed, they will use the new equipment exactly as they used the old equipment. In doing so they will not receive the benefits of modern features. The new range will only be providing improved appearance, and the customer will still be vulnerable to competitive equipment properly demonstrated. We believe that all new equipment should be demonstrated in the home after installation to make sure that the customer knows how to secure the greatest advantages from the new features. This seems easiest to accomplish through a personal call by a trained home service demonstrator a few days after the new appliance has been installed.

Dealer Cooperation

In contacting dealers it has been our experience that they have been grossly misinformed. Many dealers believe the utilities to be doing an appliance business far in excess of that actually transacted. They believe we have payments, terms, prices, etc., which are entirely out of line with those actually in effect.

When informed of actual practices, dealers in this area have willingly changed their attitude. It is our policy to contact dealers to inform them of the actual practices in the territory; at the same time present our ideas, receive their ideas, and see whether or not there is some way in which we can increase their sales of appliances and thereby improve our sales of gas.

General

As a general policy we believe that the utility should handle quality appliances. The gas appliances sold by the utility should be truly representative of the superior fuel which they are expected to use. These appliances should be sold on a mark-up which would be needed by an independent dealer. This

policy will support the prices and quality of gas equipment in the community. It will enable the dealer to sell good appliances at a profit. This profit is the item which makes an energetic and efficient dealer.

It is our policy to maintain prices, terms, warranties, and other features in line with those offered by competing dealers in the community. We believe that our salesmen should be able to promote business on a sound basis. With the training which we give our salesmen we believe they should be capable of securing a fair proportion of the business on sound commercial lines, and that if business is promoted on this basis it will encourage dealers to take an active part along similar lines.



particularly for the consumers and the utility company.

We carry in stock on our floors, gas-fired furnaces, unit heaters, floor furnaces, circulators, water heaters, and higher-priced cook stoves, all selected for their exclusive features and low service requirements, and with a national reputation. All legitimate dealers are permitted to sell from our floor at a price fixed by us. When a sale is made, the entire profit including our cash discount is turned over to the dealer.

Any time a dealer wants an exclusive agency on any particular appliance stocked by us in his town, and convinces us he will stock and push this appliance, we recommend to the manufacturer that he be given the agency. We then stock in that particular town a similar appliance made by a different manufacturer. This has proven quite helpful to the dealers and to the company.

Not being permitted to merchandise in Oklahoma, the word "salesman" is not known in our organization. Our service men are almost entirely college graduates, selected for their personal appearance, personality, energy, character and grades, then thoroughly trained in the use of gas, service work, and salesmanship. We advertise and encourage free service and adjustments.

After the appliance has been adjusted and thoroughly cleaned, the representative offers suggestions as to getting the best results from gas. This conversation leads to better equipment and a more general use of gas. If the consumer shows interest, we pass the information to a dealer, at the same time the service man follows the lead and makes every effort to see the sale is consummated. A good salesman is a still better salesman when thoroughly trained in service work. Consumers with the poorest equipment naturally call for most of the service and adjustments. On an average, each



By

W. L. Woodward
President

Zenith Gas System, Inc.

Alva, Okla.

SALES PROMOTIONAL METHODS IN A SMALL GAS UTILITY

MUCH has been written and said about sales promotion, most of which is applicable only to towns of more than six thousand population and where utility companies are allowed to merchandise. The towns we serve are less than six thousand, and in Oklahoma the utility companies are not permitted to merchandise.

A rather limited number of floor furnaces, circulators, water heaters, cook stoves and space heaters are stocked by the dealers. These appliances are generally the kind that appeal to the masses. Few of the dealers have sufficient volume or facilities to justify connection with a national credit organization for financing gas appliances. The towns are supported almost entirely by wheat farming. The farm program has reduced the acreage, the price has been low, and in recent years, the yield per acre still lower.

The merchants are interested in profit and that comes only from the sale of merchandise. Considering everything, we believe our dealers are equal to, if not above, the average, that they are carrying the type and quantity of merchandise justified in their business.

There are two distinctly different kinds of merchants in our territory who sell gas appliances. One, such as plumbers, hardware and furniture stores, who usually have a rather conservative mark up, are inclined to be ultra conservative on credits. They will take no chance. The others, home appliance dealers who are accustomed to ringing the door bells, are inclined to have a rather generous margin of profit and, to them, there are no poor credit risks. These two types of merchants, competing with each other, make a splendid working condition for themselves and

service man takes care of about five hundred consumers.

Nearly every building in the towns has gas. The service men are charged with the direct responsibility of replacing obsolete equipment with the very best appliances the consumer's finances and earnings will permit. Most of the effort is devoted to replacing water heaters and space heaters with fully automatic equipment, gas furnaces, floor furnaces, and good circulators.

Where the service man knows the consumer's connections are such that he trades with one particular merchant, he talks that merchant's appliances. If there is the slightest doubt in the service man's mind, he tries to sell the equipment on our floor. When a sale is made, the consumer is told there is a small profit for a local merchant of the consumer's choice. The purchaser must designate to whom the profit goes.

Finance Plan

Second, if not equal to our service men in load building and at the same time satisfying the consumers and dealers, is our finance plan.

The plan, in general, is to finance appliances for twelve to eighteen months at five percent. The local managers are permitted to finance on fixed dates or any other way most convenient to the consumer and satisfactory to the merchant. When the local manager is in doubt, he takes it up with the general office. The contract is signed by the consumer and endorsed by the dealer. We, in turn, guarantee the dealer he will not lose more than the profit on the appliance, which he would not have, had the sale not been made. In event of default, the dealer must make the repossession, and help us in the resale, which is through his store.

SELLING works with one particular material which is at once the plainest and most puzzling, the strongest and the most sensitive, the fairest and the most fickle, of all materials in the world—the human mind—and transforms prospects into customers.

—WILLIAM E. HOLLER

In the summer and fall, fully automatic heating equipment approved by us will be installed on trial or money back guarantee and no interest charged for the first year.

There are available to all consumers or dealers, men who will advise with them on appliances they expect to buy or sell. Where an appliance is bought and installed in accordance with our recommendations, we unconditionally guarantee its satisfaction. This department is used extensively in heating. Except for time, no loss has been sustained on these guarantees. It is most unusual to make a repossession or have to change an appliance. Where it has been necessary, the appliance has never sold for less than manufacturer's cost,

after deducting the consumer's payments that have been collected.

When a dealer is advertising strictly gas appliances, we pay one-half of his cost. All dealers and newspapers know of this arrangement, therefore, we kill several birds with the proverbial one stone.

With 3,700 meters, the merchandise account stands from ten to fifteen thousand dollars, which represents our own capital and no paper is discounted or mortgages filed. The monthly payment is put on the gas bill and collected with it. When the consumer requests additional time on a payment the cashiers are permitted to use their judgment and the dealer notified with our recommendations.



By

Frank C. Smith
President

Houston Natural Gas Company

Houston, Texas

BUILDING GAS LOAD THROUGH 100% DEALER COOPERATION

Our Appliance Sales Policy

"To assist our customers to have modern, dependable gas appliances which will give them the utmost economy, comfort and convenience.

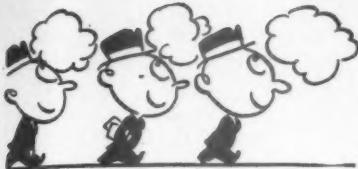
"To cooperate with retail merchants in the sale of approved gas appliances—not to compete with them by selling any gas appliances whatever for our own account."

THIS clearly worded statement of Houston Natural Gas System's policy of 100% cooperation with gas appliance dealers, competition with none, is prominently displayed in each district office of Gulf Cities Natural Gas Company, Texas Natural Gas Utilities, and Tex-Mex Natural Gas Company, operating what is known as Houston Natural Gas System. This system operates along the Gulf Coast section of Texas, serving approximately 17,000 consumers in 75 towns through 14 district offices.

This program of active cooperation with dealers in the sale of gas appliances was launched in 1934. Prior to that time, the gas system had not sold appliances, nor had it encouraged or aided dealers to sell them. In beginning a program of active cooperation,

the gas system explained to all gas appliance merchants—furniture stores, hardware stores, plumbing shops, general merchandise stores, and specialty shops—that sales of gas for domestic purposes could be made only as gas was burned. In order to burn gas, it was pointed out, consumers had to have gas appliances, and it was of utmost importance that customers have not only adequate appliances for all household uses, but that they should be modern, in order to give complete satisfaction, so that gas service might be pleasing to customers.

The gas system told dealers, in effect, "We want you to sell all of the appliances. We do not wish to compete with you, but the appliances must be sold, and if you go at it in earnest, you will receive from us a degree of co-



Gas-minded men

operation which will insure your success. If you do not take care of this business, we will simply be forced to do so." All agreed that this standpoint was fair and, without exception, entered into full cooperation with the gas system, which has continued since that time.

The cooperative program of Houston Natural Gas System has six elements which were considered necessary, and sales results of the past four years have proved the plan a feasible one. Here are the six elements:

1. A preliminary market survey, conducted at three- or four-year intervals. This comprises a complete report on every home in every town on the gas system's lines, in card index form, showing whether occupied by owner or tenant, number of rooms, of gas outlets, of gas appliances and the condition of each, and what appliances are being used where gas appliances should be used, and their condition.

From this information, prospect lists are compiled for each appliance campaign, and furnished to all cooperating dealers. Dealers make monthly reports of sales to the gas system, and this information is posted to this permanent record, so that information is kept up to date.

2. Free space in a modern showroom, located in each town's gas company office, available to all dealers for the display of their gas appliances. These displays are arranged by the gas system; each bears a placard, showing the name of its dealer; and these exhibits are varied according to seasonal use and corresponding sales campaigns.

3. A complete service of planning advertising, preparing newspaper and direct-mail material, supplying truck banners and window streamers, all of which is made available to each dealer. This service is furnished as a preliminary to each campaign. The gas system's advertising and sales departments plan and prepare this material without cost to dealers. The dealers participate in most cases by running newspaper advertising locally, having their joint signatures in each advertisement, and paying for this space on a pro-rata basis. Direct-mail is handled by the gas system, as well as truck banners, window streamers, and special campaign placards or displays.

4. Participation in these seasonal campaigns, with solicitation by gas company em-

ployees as well as by dealer representatives in behalf of dealer sales. The gas system district manager is held responsible that each prospect in his district is solicited during the campaign period. Quotas are assigned, sales meetings held with dealers, and frequent follow-ups by district managers are a part of the gas system's participation in each campaign.

5. Identical finance terms, the most liberal obtainable for the cooperating dealers, made available to all dealers throughout the year. These terms run as high as 48 months, with \$1.50 as the minimum monthly payment, paid with the gas bill, \$35.00 as the minimum contract to be financed, and limited liability on the dealer. These terms are made available through First Bancredit Corporation. In seasonal campaigns, the terms may be varied or made easier in one way or another by waiving or reducing the cash down payment requirement.
6. Sales helps: Appliance sales schools, homemaker's institutes (or cooking schools), special seasonal projects, and a complete tie-up with national advertising campaigns through the use of advertising materials offered.

The results of this program of



By
John J. Quinn
Sales
Manager

NINETEEN-THIRTY-NINE
*N*ineteen-thirty-nine will reward the salesmen who sell as the farmer plows—daily, doggedly, deliberately plodding and plugging along, not wondering about the "upturn" but turning up the furrows.

—WILLIAM J. CAMERON

100% cooperation with all dealers reveal why dealers are so enthusiastic in their support of it. In the four years, 1935 through 1938, dealers have sold 7,987 modern gas ranges (remember, this is a 17,000-meter system), 5,847 automatic gas water heaters, and 3,073 gas refrigerators. The dollar volume of these three major gas appliances is over a million and three-quarters, and if the small heating equipment and automatic heating installations are added in with these, the dollar volume is right at the two-million-dollar mark!

Boston Consolidated Gas Company Boston, Mass.

MERCHANDISING INNOVATIONS BOOST GAS APPLIANCE SALES

NIETEEN THIRTY-EIGHT was a busy gas promotional year for Boston and a great many avenues of approach were explored in the field of appliance promotion and sales.

Backing a number of merchandising innovations were substantial advertising campaigns in all Boston metropolitan newspapers, over fifty suburban daily and weekly newspapers, and a quantity of direct mail material.

Four major campaigns featured the year's promotion. Most notable of these was probably the extension series of 1000-line advertising stressing *Quick Gas Cookery* and featuring the superior work of gas cooking in producing delicious dishes shown pictorially in each ad. Merchandising of

a range at a price was included in each ad, but subordinated to the aggressive competitive theme of *Gas Cookery*. American Gas Association national advertising slogan was woven dominantly into each of these advertisements, as in all our 1938 material.

Kitchen heating advertising featured *Heat-Cook with Gas* in the Spring—and in the Fall our sales were plentiful enough for us to flash a success theme for all advertising: *Hundreds of Bostonians Adopt Gas Kitchen Heating*.

Gas refrigerator advertising with its theme of *Stop, Look, Listen and The Refrigerator You Hear About, but Never Hear told the gas refrigerator*

(Continued on page 159)

Gas Cooking Excels . . . Test Experience Proves Consistent Superiority

WHILE it can be shown that gas for cooking is more efficient in energy used than electricity, and more economical to the customer, nevertheless this is not the entire picture. If electric cooking provided a character of service superior to gas, then these factors may be justified, just as the automobile outmoded the horse and buggy. However, let us study the problem a little. I know of no better discussion on this subject than that of Helen Smith in the December 8, 1938, issue of *Gas Age* entitled—"Why I Prefer Gas for Cooking." If you have not read it, be sure to do so.

I will quote parts of it and add a few comments of my own.

Our very satisfactory experiences with good gas ovens apparently call for some technical explanation. Here is what Harvey Klumb, who developed our Appliance Testing Laboratory, has to say on the subject:

* Vice-Chairman, Technical Section, American Gas Association.

Part of paper delivered before Wisconsin Utilities Association, Milwaukee, Wis., March 13, 1939.

By A. M. BEEBEE*

Rochester Gas & Electric Corp.,
Rochester, N. Y.

Perhaps you may have forgotten my oft-repeated contention that a good gas range will do a better baking job than a good electric range. I say this in spite of the fact that I have been trained electrically and in spite of the fact that we sell gas as well as electricity and believe in both.

Our tests in the laboratory, as well as in the Home Service, have shown consistently better results with gas ranges than with electrics, and, I believe that the reason is better heat control in the working zones. By that I mean that a gas range oven has a natural movement of heated air within it, which is much more likely to permit more even heat transfer to the material in the oven. Baking in all its forms is a chemical process in which time and temperature, or more precisely, time and heat, are the mediums which bring about the chemical change. The premise we should work on is to assume that the ingredients are properly prepared and wash out, as far as we can, the variables beyond the control of the housewife. These variables are indifferent temperature control in the baking zone, non-uniformity of heat application, uneven temperatures in the cooking space, and reduced air movement in the cooking area.

Temperature Control in Ovens

The location and sensitivity of a thermostat is most important, and especially is this true during the period immediately after the material is placed in the oven. These few minutes are critical. In my opinion, based on many test observations, it is in this critical period that electrics fail in most instances. Surely other Home Service people have discovered that repeating the same test a number of times in succession gives widely different results, even though the baked material is taken from the same batch of batter. The result is due entirely to the difficulty the electric thermostat has in discovering that something has been placed in the oven. In other words, slow or complete lack of response. An electric oven is regulated over a series of cycles varying as high as plus or minus 40 deg. F.

The input to the empty oven is often determined solely by the heat loss. Now when material is placed in the oven, the heat input should be increased at once because heat is required to perform extra work. Unless this is done, the material placed in the oven removes heat from the surrounding air and objects, and the rate of heat transferred into the material is reduced because of the lowered temperature differential between the material and the surrounding air. Unless this differential is maintained at the proper value, the chemical process proceeds at an improper rate, the process takes longer and the initial stages being incorrect, the whole result is changed. If the material is placed in the oven, just before the electric thermostat cuts off, the opposite result takes place; that is, heat is applied too rapidly in the early stages of the process and the final result is again changed. Too rapid heat application in the beginning is usually manifested by cracks in the top of the baked material.

Results are often variable in gas ranges as well, but our test experience over a long period of time and many, many ranges has left the very distinct impression, that of the two devices, the gas range is far more consistent in delivering good results than the electric and will give the results we have the right to expect better, if we wish to return the housewife to her kitchen to prepare the nice things we like, rather than buy them at the store.

Where Electric Ranges Fail

As you know, differences in electric ranges as high as 28 deg. to 50 deg. F. may be found on the horizontal plane, and these differences are constantly changing as the thermostat swings the oven temperature. Pity the poor housewife who tries to make two cakes look alike! Such things are not



Jane O'Connor, of the Rochester home service department, giving a cookie-baking demonstration to show the superior performance of the CP gas range

found in good gas ranges, which show variations of only two or three degrees, probably because the increased air movement tends to wash them out, and again probably the gas range manufacturer has no red hot radiating body to contend with and has throttling control of the heat input rather than the "on and off" operation in an electric range.

Another reason why cooking in a gas oven is more productive of uniform results is because gas ovens rely almost entirely on convected heat in addition to their throttling control and are therefore unaffected by shadows in the oven. The "full on and full off" operation of electric ovens plus the effect of the "sun rays" and radiant heat as changed by shadows cast in the oven by utensils unless designed to use convected heat, is more of a factor than is ordinarily realized and requires skill and care in order to get desirable results.

Remarkable Heat Distribution in Gas Oven

Tests which we have run show that the heat distribution in a modern gas oven is most remarkable, showing only from two to five degrees variation for any one point in the oven, as well as when compared with any other point in the oven.

We hear electric range enthusiasts claiming that their ranges are capable of time temperature control, so as to enable uniform cooking results. In this way they have again tried to cover up a point where they are vulnerable. They have said gas ranges are affected by variations in heating value of the gas and by the pressure, but they have failed to state that variations in voltage have four times the effect on the output of electric ranges that equivalent variations in pressure have on gas ranges.

One interesting side light on this situation is that modern electric ranges have a total demand equivalent to nearly a 15 h.p. motor. If uniformity of voltage is to result, in order to avoid flickering lights and to provide the much-touted "uniform cooking," expensive construction and wiring, as well as distribution facilities, must be involved.

For all these reasons, it is difficult for me to see where electric cooking while an excellent method of cooking if gas is not available, is to be compared favorably with "flame cooking" from a modern gas range.



All ranges sold by the Rochester company must pass rigid tests as to performance characteristics of oven temperature, as well as actual baking results. Shown here are Howard Brown, appliance laboratory director, and an assistant, testing the oven performance of one of the new gas ranges

There is another matter that might properly be mentioned at this time. One of the most recent activities of the electric range advocates is to place great stress on the fact that the average electric range equals or exceeds all the 22 new requirements of the recently featured CP range of the gas industry. While this is very flattering to have them compare their ranges with modern gas ranges and claim they are their equal, it should be borne in mind that these 22 requirements of the CP range were put in to correct the points in gas range design that were lacking in performance, but gave absolutely no consideration to the points in gas range design where it has already excelled, and in which electric cookery is inferior.

In other words, it had never seemed important that gas ranges should have a specification saying that the temperature variation in the oven at any one point should not vary more than 5 degrees from the thermostat setting. Gas ranges can easily do that, so why specify it? However if such a specification is included, as I understand will soon be the case, then let us see the electric ranges meet that most important specification.

We are prone to hear much of the ability of electric ranges to provide the clean and cool kitchen. This feature, consumer surveys show, has unquestion-

ably been "sold" to the public generally. Again, let us see what the facts are.

About the only advantage that the electric range has over an unflued gas range, and which may be a virtue or a vice, depending on the point of view, is the matter of less heat in a kitchen. In older houses, most of which do not have adequate heat in the kitchen, this feature of a gas range is a virtue. In modern new houses, this is less a factor, though it does help in providing a small contribution to the necessary cost of heating the house. In the summer time, with open windows, this feature, in most cases, is of negligible importance either way.

In the cases where heat in the kitchen is a factor, by proper fluing of the gas range, it can be made even a cleaner, cooler kitchen than an electric range will provide. By fluing, I do not mean the use of the old, unsightly and unpopular exposed flue pipe. It is possible, with very little change, to flue connect these modern "flush-to-the-wall" ranges, as well as the more general types, by a concealed connection at the back of a range direct to a flue in the wall, without any unsightly overhead pipe.

Since it can be proven that the products of combustion of a gas range are absolutely harmless, one might prop-

erly ask, why should we even think of flue connection? While the above is true, as will be developed later, the products of combustion do contain some heat and odors, as well as greases and oils from the oven and broiler cooking operations, the same as will be produced from similar cooking on an electric range. When we discharge these in the kitchen, we are as bad as the electric range in providing the much sought-after clean, cool, odorless kitchen, and yet we have in the products of combustion sufficient heat to create the necessary draft in a concealed flue to provide proper kitchen ventilation without the fan, which so many electric kitchens require.

When the fan is used, as in most electric kitchens, these vapors, greases and odors of cooking are discharged into the room, some of which cannot help but deposit soil and dirt, while the rest is caught in the fan and pushed out of doors. However, by flue connection, with a gas range, these vapors are caught at the source insuring clean walls and a cool, clean, odorless kitchen. In other words, we have potentially a cleaner, cooler, and more odorless kitchen to offer with gas than electric cooking provides, and yet this is the one point electric cooking has championed and sold to the public.

Electric Complications

It may be argued that if a flue is so important, electric ranges could be flued to meet this need and therefore gas has no advantage. However, the reason they have not done so is because they do not have the warm products of combustion to create the necessary draft. Furthermore, to flue a broiler on an electric range involves complications, as a result of the condensation of greases and fats in the flue pipe and creates a fire hazard. Modern gas ranges are equipped so that these vapors must pass through the flame and are thereby incinerated to clean gases—carbon dioxide and water vapor, and therefore do not involve this difficulty.

There is no operation in cooking that is as productive of grease, dirt and odors in the kitchen as the broiling operation and yet broiled food is delicious. It is possible to broil a steak in a modern gas range and have absolutely no odor or smoke at the vent.

In other words "flame cooking" is an advantage, rather than a liability which electric cooking advocates try to make us believe, since it is the only method that insures incineration of those greases and smokes which the broiling operation produces in such quantities. We should champion "flame cooking" as the means whereby we can produce a cleaner kitchen.

Again let us state that the primary purpose of the flue is to remove cooking odors, greases and oils from the broiling and roasting operations and not because of the nature of the products of combustion, as will be readily seen from the following.

Combustion Products Harmless

The combustion products of gas are two odorless, clean, harmless gases, namely, carbon dioxide and water vapor. The combustion products from gas used for cooking in the average house amounts to some 70 cu.ft. of water vapor per day or about 8 lbs. of water a day added to the air of a house, or about $\frac{1}{6}$ the amount that health authorities tell us should be added to the air of the average house to improve it. There is also produced some 35 cu.ft. of carbon dioxide, which, assuming absolutely no air change, is $\frac{1}{3}$ of 1% of the average small house, yet in inhalators used at hospitals to revive a person after an anaesthetic, a mixture of 7% CO₂ and oxygen is used. If we assume a normal infiltration of one air change an hour, this $\frac{1}{3}$ of 1% becomes 1/76 of 1%. Again these points are insignificant to consider.

The grease, grime and dirt from cooking does not come from the fuel, either gas or electricity. It is the oils, fats and greases that are boiled, broiled and distilled from food in the cooking operation that cause dirty conditions. The higher the temperature used for cooking, the worse these conditions are.

One situation that has led the public to accept the myth of the cleanliness of electric cooking is because gas, with its ready and unlimited heat capacity, has accustomed people to high temperatures for cooking, which some people prefer.

However, electric cooking, by reason of its limitations, has had to champion low temperature cooking, which we must admit has numerous advantages. As a result, when a person goes from an old-type gas range, and the use of

high temperature for cooking to electric cooking, of course the resultant cleanliness is most impressive. However, the use of low temperature cooking is not limited to electric ranges, but can be used with equal success with gas if one wants to.

While even with low temperature cooking odors and greases are produced to a much lesser extent, so that fluing with either gas or electric cooking may not usually be necessary or desirable, nevertheless in cases where these factors are important, the vented gas range can produce a superior result.

From the above we can see that gas cooking is not only more economical and a generally superior method of cooking but it also is capable of excelling the biggest feature of electric cooking, namely, the development of the clean, cool, odorless kitchen.

Gas on Treasure Island

GAS rules on Treasure Island! Where heat is required at the Golden Gate International Exposition, gas predominates. With one exception, the entire heating load of the Island is gas-fired. As for cooking and other major uses, the following is of interest:

Most kitchens not only use gas for cooking but have gas-fired, heavy-duty dish-washing machines. A total of 23 restaurants, of both American and foreign types, use gas for cooking and water heating. There are also many miscellaneous consumers of gas at the Fair. Add to this the entire group of small food concession stands, a total of 66, who use gas for cooking, and some idea may be obtained of the use of gas at the exposition.

The entire gas load per hour is approximately 60,000 cubic feet maximum.

"Individual Gas Holder"

A most unusual concept of an automatic water heater displayed in our auditorium came from a visitor from the Orient who thought it was an "individual gas holder."

—VERA CARTER AULT

Radio Drive

GAS APPLIANCE SOCIETY of California, San Francisco, on March 15 launched a concentrated 10-day radio campaign over 25 stations in Northern and Central California extolling the qualities of CP gas ranges. Six hundred spot announcements were scheduled as well as five-minute participations on home economics programs on 12 stations. The campaign is cooperative and is backed up by copy in newspapers, dealer cards, movie slides and dealer contests.

Standards for Installing Gas Winter Air Conditioning



H. P. Morehouse

THE gas companies, who are members of the Metropolitan Heating and Air Conditioning Council, have prepared recommended practices for the installation of gas winter air conditioning

in new homes. They are in booklet form and the work is known as the Gasco Installation Guide.

These standards, prepared by a joint committee of the Council and the Metropolitan Service Managers Group, have created such interest throughout the gas industry that the American Gas Association has taken over the distribution on a national basis and is making the book available in quantity to all gas companies and manufacturers at a nominal cost.

Order vs. Chaos

The reason for the preparation of these standards was to bring order out of the chaotic state into which winter air conditioning was falling because of the unorthodox installation practices that were being followed.

As is so often the case with a new art, engineering, care and experience go to make up its early history. Then when a well-deserved popularity has been attained the vendors vie with each other to cut costs in an effort to get the order. These reductions in sales price are invariably accompanied by a reduction in quality, workmanship and engineering skill. There is a tendency to chisel and cut corners to a point where unsatisfactory results are the unfortunate experience of the innocent buyer.

Such has been the history of gas winter air conditioning in the East.

By H. P. MOREHOUSE

Chairman, Subcommittee on Improved Selling Practice, A. G. A. House Heating & Air Conditioning Committee

• The Gasco Installation Guide described in the accompanying article is an outstanding contribution to the gas industry. It is intended for distribution to builders, realtors, architects, plumber-dealers, and all others concerned with getting the right kind of winter air conditioning system installed.

• Mr. Morehouse gives the background which led to the preparation of the standards incorporated in the Guide. He has some interesting things to say about coal and oil as well as gas.

• Sample copies of the Guide are being mailed to all gas companies by the America Gas Association. Additional copies are available at the following prices, f.o.b. New York City:

	Each
Single copies.....	\$.10
25 copies.....	.06
50 copies.....	.05
100 copies.....	.03½
Contract pads for Gasco Guide25

During its early history each installation was carefully and individually engineered. The results were extremely satisfactory. The new art seemed destined to become the standard by which good heating was judged. Gas companies everywhere encouraged this new method of heating because it offered them their best opportunity for getting the new home market. It was the lowest cost system to install. It operated at a lower fuel cost than steam or hot water systems and it had a definite romantic advertising appeal due to its newness and the wide publicity given to its counterpart, summer air conditioning.

Also gas companies soon came to recognize that heating homes by winter air conditioning, regardless of the heating fuel used, was to their advantage. When other types of heating systems were used with other fuels the domestic hot water was usually furnished by a summer-winter hook-up. This meant the loss of the hot water load for gas. But with winter air conditioning there is no satisfactory combination method to furnish domestic hot water. The result is that even when oil or coal is used for winter air conditioning the valuable hot water load is usually retained on gas.

Utilities' Responsibility

It is therefore evident that the utilities cannot afford to see the good name of winter air conditioning blackened by unsatisfactory installations. Such a situation was rapidly approaching when the Gasco Installation Guide Committee was formed. There was already a trend on the part of architects, builders and home buyers back to other heating systems, particularly forced hot water.

The low-priced home and speculative building projects were the points at which sloppy installation practices first appeared. These practices later spread to the better class home in the headlong dash to cut prices and get the order.

Unsatisfactory practices crept in such as sidewalk deliveries of units, with the builder hiring his own sheet metal man. In these cases often no layout was ever made. There was divided responsibility and little supervision. Units were sized wrong, and fans were either too large or too small for the job. Ducts were installed without dampers so that balancing was impossible. Insufficient return area or even a complete lack of return ducts was sometimes en-

countered. Sheet metal ducts were often improperly run, improperly braced and made of too light material. Units were installed in inaccessible locations for service.

There were many other examples of unsatisfactory practices. Most of the dealers participating in these unorthodox practices did not want to do a poor job, but a vicious cycle started somewhere and everyone was afraid to check the practices for fear of losing the order.

The gas utilities standing in a somewhat unbiased position were the only hope for establishing a set of standards which would assure the continued enthusiastic acceptance of winter air conditioning.

A Practical Guide

The Gasco Installation Guide was not prepared as a code of minimum requirements, but rather as a set of standards through which everyone concerned could be assured of a first-class installation. Its language is that of "suggestions" rather than "demands." Its rules are not ideals toward which we might strive but never reach. There are no fancy theories or unnecessary recommendations.

On the contrary the rules follow the standards suggested by such recognized authorities as the American Society of Heating & Ventilating Engineers, The National Warm Air Heating and Air Conditioning Association, National Board of Fire Underwriters, American Gas Association and over one hundred manufacturers of gas-fired winter air conditioning equipment. The Guide brings together the ideas of many authorities, applies them specifically to gas fuel and arranges them in a simple form for handy use by builders, architects, dealers, engineers, installers, utilities and the home buyer who is occasionally interested in such details.

The question immediately comes up as to how such a set of rules can be made to work. The policy of policing installation practices is, of course, something each utility will have to decide upon for themselves. However, the committee offers one possible solution to get the Guide into widespread use. This is a single

sheet specification form which may be purchased through the American Gas Association in padded form.

This form when signed by the installer is a contract to make the installation according to the precepts of the Gasco Guide. There is room on the form for exceptions to be taken to certain rules. These exceptions are taken in writing and are agreed to in advance between the owner, architect or builder, on the one hand and the dealer or installer on the other.

Such a set of standards reduced to a simple contractual agreement offers an advantage also to the dealer. He knows when he places his bid that he is bidding against a comparable installation by his competitor. His interest in cutting corners is thus to a considerable degree diminished. It is urged that all utilities who adopt the Gasco Installation Guide as their standard furnish all dealers and installers with extra blank copies of the specification form and also urge architects, builders and prospective home builders to insist that a signed specification form accompany each dealer's bid.

We will review here briefly the

main subdivisions of the Gasco Installation Guide in order to give an idea of its contents:

- I. Equipment approval
- II. Heating Unit
 - A. Fan and Motors
 - B. Size
- III. Erection of Furnace
- IV. Installation of Furnace
 - A. Furnace Room
 - B. Accessibility
- V. Controls
 - A. Thermostat
 - B. Furnace Control
 - C. Summer Switch
 - D. Humidifiers
- VI. Air Ducts
 - A. General
 - B. Supply Ducts
 - C. Return Ducts
 - D. Dampers
 - E. Supports
- VII. Registers and Grilles
 - A. General
 - B. Supply Registers
 - C. Return Grilles
- VIII. Filters
- IX. Electrical Connections
- X. Balancing Systems
- XI. General

(Continued on page 160)

Puppet Stars to Present Grand Opera at Gas Fair Exhibit



Visitors to the gas industry's "Court of Flame" exhibit at the New York World's Fair will see the world's most unusual opera company in action. For the first time in exposition history, 160 puppet stars, members of the American Puppet Opera Company, will present a repertory of seven popular operas. It is expected that this unique organization will draw thousands to the theatre of the gas industry's exhibit group where these operatic performances will be presented several times daily.

Appliance Sales Increase

COMBINED sales of gas ranges in Chicago by The Peoples Gas Light and Coke Company and cooperating dealers totaled in excess of 60,000 in 1938 for the second year in succession, according to the annual report to stockholders.

Approximately 6,000 gas refrigerators were sold in 1938 as compared with 3,200 in 1937. Sales of automatic water heaters approximated 3,800 as compared with 4,200 in 1937. Space heating customers numbered about 23,500 at the end of the year, an increase of 800 over the previous year.

Central Hudson Gas Revenues Rise

REVENUES of the gas department of Central Hudson Gas & Electric Corporation, Poughkeepsie, N. Y., increased 3.4 per cent in 1938 as compared with the previous year, according to the annual report submitted to the board of directors by Ernest R. Acker, president. The company finished the year in a sound financial condition and earnings were satisfactory in view of conditions prevailing during the year, according to the report.

The hurricane of September, 1938, caused considerable damage to the company's property and some service interruptions, which were promptly restored. High tribute is paid in the report to the resourcefulness and efficiency of the company's employees during the emergency.

Warning against the effect of the disproportionate taxation of public utilities, the report points out that tax payments of Central Hudson charged to operations have increased 128 per cent in the past ten years as compared with an increase of only 25 per cent in operating revenues.

Safety Record Wins Recognition

IN 1925 the Consolidated Gas Electric Light and Power Company of Baltimore undertook a reorganization of its safety program. One indication of the success obtained is an improvement of 96.2% in the accident index rate for 1938 over 1925.

This accomplishment was given recognition recently by the Baltimore Safety Council at its annual banquet and meeting in January when a certificate of special commendation was awarded to the utility. The certificate was inscribed as follows: "In Recognition of Its Outstanding Record in Industrial Accident Prevention as Indicated by the Reduction of 96.2 Percent in the Accident Index Rate Since the Year 1925."

Annually the Consolidated holds a safety barbecue and oyster feast in honor of operating groups which complete the preceding year without an accountable lost time personal injury accident. The attendance at these parties has increased to such an extent that this year it was necessary to hold the

The Gas Refrigerator

(Walter C. Beckjord at Eastern Regional Gas Sales Conference
Pittsburgh, March 2, 1939)

"The days of high mark-up on such appliances appear to be over, and our sales policy should be progressive and designed to meet actual competitive conditions. Certain companies have been concerned at times about whether any profit was being made from the refrigeration load. Regardless of whether this appliance sells or operates at a profit to the utility, it is my personal opinion that the gas refrigerator is one of our greatest assets. * * * * It caught the public imagination because it was a serviceable machine, as mysterious—and therefore as modern—as anything electric, and it made friends from the very start. Housewives are truly proud of their gas refrigerators, and the goodwill that this appliance has built up for gas is of tremendous value to our industry. Everywhere this appliance commands respect, and because it is a comparatively new machine, more wonderful than the electric, noiselessly producing cold from heat, it proves that gas equipment and gas service can be as modern as electricity. This is the real reason why we should aggressively push the sale of the gas refrigerator."

Providence Gas Company Reports Gains

IN spite of the property damage inflicted by the hurricane and storm flood waves which struck New England in September, the Providence Gas Company, Providence, R. I., completed a very satisfactory year in 1938 according to the annual report to the stockholders, recently released by F. C. Freeman, president of the company.

Of special significance is the gain registered in the domestic field. The sales of domestic gas for general consumers were greater by 21,000,000 cubic feet than in 1937. There were 81,996 meters in use at the end of the year compared with 80,729 at the beginning of the year. Sales of gas

for commercial, industrial and manufacturing purposes were under the previous year, reflecting general business conditions.

The report referred to the company's tie-up with the national campaigns on gas ranges, water heaters and refrigerators sponsored by the American Gas Association and to the participation in the national advertising program. In the 1938 national refrigerator contest the company won the prize in its class for the greatest number of installations per 10,000 meters. It is the only gas company in any division of the contest which for four successive years has won a major prize.

Stressing the vital importance of tax reduction, the report points out that if the company's taxes were applied to gas rates they could be reduced by approximately 16 per cent; if applied to the pay of employees an increase of over \$600 for each employee per year would result.

In describing the damage done by the hurricane, the company paid tribute to the work of its employees and the help of many outside friends. An editorial entitled, "Here's That Man Again," revealing a keen understanding and appreciation of gas service during the catastrophe, which appeared in the *Providence Journal* of October 11, 1938, is reprinted in the annual report. This editorial was reproduced in the November, 1938, issue of the *A. G. A. MONTHLY*.

Expansion Program

NIAGARA HUDSON SYSTEM companies will spend about \$25,000,000 during 1939 for construction necessary to the extension and improvement of service to electric and gas customers in New York State, it was announced March 17 by Alfred H. Schoellkopf, president of Niagara Hudson Power Corporation. About \$15,000,000 was spent for these purposes in 1938.



1



2



3



Entrance to Gas Exhibits with a group of strolling Mexican entertainers who frequent this display

West Coast

By RUTH DORRIS

Assistant Publicity Director,
McCann-Erickson, Inc.

TREASURE ISLAND: The Gas Industry which has shown both the commercial and consumer world that it can engineer gas-fired appliances for the home with complete controllability, is giving a daily lesson in showmanship at the Golden Gate Exposition and at the same time presenting a picture in every way highly pleasing to the eye.

As the visitor steps off the ferry at Treasure Island and is enthralled by the unique beauty of architecture, towers, murals, sculpture, Oriental street lamps, playing fountains, flags rippled by the breezes, gorgeous landscaping, and delightful vistas in every direction, it is a shock to enter the huge buildings housing the exhibits of what all America recognizes as "our local and national advertisers."

For however striking and boldly colorful are the individual exhibits, a County Fair atmosphere broods overall in the raw structure of the buildings which forms the background or setting. Rough wide plank flooring, yawning walls and arched ceilings with a network of exposed rafters frankly startles and disillusionments the observer who naturally expects to be greeted by Fairyland within as well as without.

Not so with Gas Exhibits! Here is



The Mexican troubadours pose in front of one of the all-gas kitchen displays



5



6



7



8

Showmanship

small world of romance, color, and charm, congruous in every detail—from the huge curving canvases of twilight—sky blue concealing the rafters, to the wide sweep of resilient glossy brown linoleum covering the floor.

Spaced across the entire front and at the entrance of the International Building, Siamese twin of Homes and Gardens Building (housing all exhibits of a similar mechanical character) Gas Exhibits is keyed in theme to the Golden Gate Exposition—done in Spanish architecture in the spirit of Old California, although in modernized form.

Benches of antiqued or weathered wood permit the spectator to rest in quiet comfort after the confusion and fanfare of the multitudinous other exhibits, and enjoy the changing scenes of the seven beautifully tinted and decorated modern kitchens on the revolving stage set in the open wall of one of the two bungalows.

So sparkling clean is the white kitchen equipment that this in itself gives a striking setting for the color slides of foods rotated and high-lighted at a window in the wall above each gas range, showing the top stove arrangement, the broiler and oven of each model to excellent advantage. And all this is accomplished smoothly to the soft strains of recorded music.

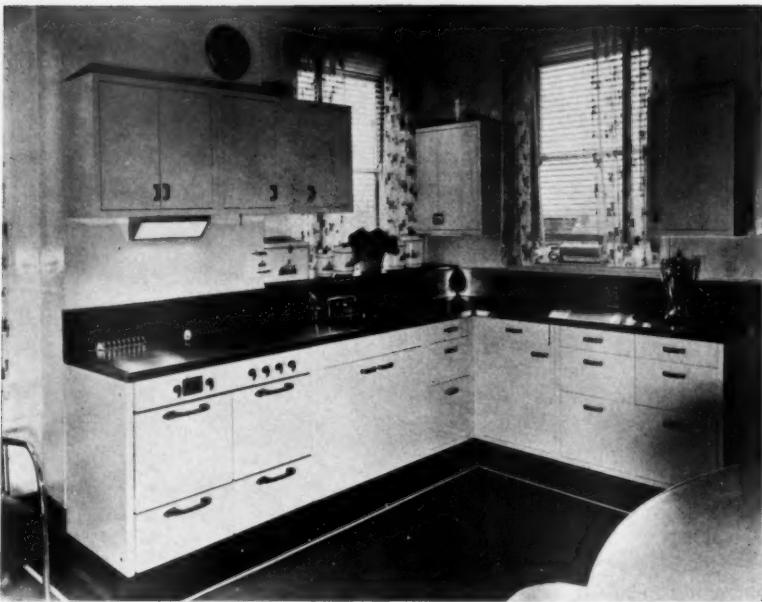
(Continued on page 159)

5. Glass block under cabinets at each side. Congo ivory or pale yellow walls, bright blue work tops. Blue handles. Circular shelves with colorful pottery.

6. Ivory walls, crimson work tops, crimson knobs on cabinets. Red striping along furring band toward ceiling. Scalloped corner shelves. Contrasting pottery.

7. Deep cream walls, deep blue interior of cabinets, glass shelves; blue work top of sink. Blue knobs on cabinets. Pastel pottery.

8. Deep ivory walls, two narrow stripes of crimson molding at furring. White sink with red front. Red marbleized linoleum tops a work corner at left; opposite at right is a work top of crimson Formica and Monel binding. Serving counter at right angles to kitchen topped with stainless steel; divides the kitchen and dining area where two corners have built-in seats covered with crimson leatherette upholstery. Crimson tops the desk, seat and stool.



An "L"-shaped kitchen in a Kentucky residence, showing a Duocrat installation and Monel topped cabinets

Presenting the Duocrat

A NEW sound-slide film has recently been produced jointly by the American Stove Company and the International Nickel Company, Inc., entitled "Presenting the Duocrat."

The film was designed for the education of wholesale and retail salesmen to enable them to talk intelligently about this newest of gas appliances. There are two types of Duocrat—the Sink Duocrat, a combination of a Magic Chef gas range with steel base cabinets into one complete unit with a continuous, one-piece Whitehead Monel sink overall; and the Cabinet Top Duocrat, a combination of steel cabinets and a Magic Chef gas range into one unit completely covered by a continuous, one-piece Monel cabinet top.

Gas utilities, dealers, and distributors may purchase the film and record for the promotional price of \$3.00. The running time of the film is 10 minutes.

To order the film, or for any information concerning the Duocrat, write to The International Nickel Company, Inc., 67 Wall Street, New York, N. Y.

Agnes M. Gleason Dies

AGNES M. GLEASON, in private life Mrs. William D. Murphy, formerly secretary of American Gas Journal, Inc., died at her home in the Bronx, New York, on March 13.

Miss Gleason started work for the Journal as a bookkeeper on October 1, 1916. Four years later on October 15, 1920, she was elected secretary of the corporation, which position she held for seventeen years. She was an executive of ability and had a

wide circle of friends throughout the gas industry.

For many years she was a member of the American Gas Association and was particularly active on committees of the home service department.

Gas Measurement Course

THE annual Southwestern Gas Measurement Short Course at the University of Oklahoma, Norman, Oklahoma, will be given April 18-20 at the University. A comprehensive program covering problems pertaining to the measurement and regulation of gas has been announced by L. G. Rheinberger, chairman of the General Committee.

Gas Dominates Famous Country Club District

ONE of the largest and perhaps the most talked about real estate developments today in the United States is the famous Country Club District of Kansas City, the work of the J. C. Nichols Companies. As a residential development, the Country Club District is distinguished not alone for its size but for the high standard it has set in beauty and in scientific land development, and its methods for creating and promoting property values. It is distinguished in another highly important respect, namely, the widespread use of gas and gas appliances.

Beginning modestly in 1907 with a ten-acre tract, the Country Club District has now grown to 4,000 acres in Kansas City, Mo., and in an adjoining area across the

state line in Kansas. The Kansas areas included, the Country Club District comprises 10% of the area of Kansas City, Mo. There are now about 6000 homes in the district. The population, including residents in 160 apartment buildings, totals 35,000. The buying needs of this little city-within-a-city are supplied by one central shopping area, the Country Club Plaza and seven neighborhood groups of stores, occupying ten full blocks.

All of the homes built by Mr. Nichols are completely piped for all uses of gas. Most of the homes that have been erected are using gas for heating and practically all of the homes built within the last five years are equipped with a straight gas design furnace. Furthermore, all the homes are equipped with automatic gas water heaters and 98% use gas for cooking.

Recognized today as America's foremost residential development, the Country Club District is visited by thousands of architects and builders who see first hand evidence that gas is doing the four big jobs in the home.

"Man-the-Sales" Drive Gets Under Way



F. E. Sellman, vice-chairman of the Refrigeration Committee, holds a reproduction of "The Flying Cloud," one of the most famous of the Yankee clipper ships, models of which will be presented to winning companies in the national sales contest. The painting was done by Mr. Sellman himself, painting being one of his hobbies

AS company sales managers have entered their companies in the "Man-the-Sales" campaign for the sale of gas refrigerators with vigor and enthusiasm according to an announcement by R. J. Rutherford, chairman of the A. G. A. Refrigeration Committee.

In this year's contest, 37 models of "The Flying Cloud," famous Yankee Clipper, are offered to a similar number of companies who are ahead at the end of the April-May-June period of the gas refrigerator sales contest. This is a much larger number of trophies than was granted in previous years.

As in other campaigns in recent years, the individual salesmen will receive substantial cash prizes. To the high salesmen winners, as the crew who "man the sales," more than \$30,000 will be divided. In addition to cash, individual high men who make record sales in the grand finals will each receive a Chelsea ship's bell clock.

Personal AND OTHERWISE

To Leave Presidency of Public Service



T. N. McCarter

THOMAS N. MCCARTER, president of Public Service Corp. of New Jersey since the founding of the company 36 years ago, announced March 21 that he had decided not to stand for re-election at the board meeting following the annual stockholders' meeting on April 18.

Mr. McCarter recommended the creation of a new office, chairman of the board, which he said he would be glad to fill. He also suggested the establishment of another new office, chairman of the executive committee.

Mr. McCarter is a past director of the American Gas Association and donor of the McCarter Medals for life saving by the Schafer prone pressure method of resuscitation. He is one of the most widely known and respected leaders of the public utilities industry.

L. L. Tonkin Heads Hope Natural Gas Co.

L. L. TONKIN has been elected president of the Hope Natural Gas Co., Pittsburgh, Pa., succeeding H. C. Cooper. Mr. Tonkin was previously vice-president and chief engineer of the company.

Born in Tidioute, Pa., Mr. Tonkin received his early education in Oil City, Pa., and Andover, Mass. After graduation as a mechanical engineer from Cornell University in 1912, he obtained his first gas company job in the meter department of the Hope Natural Gas Co. Less than a year later he was transferred to West Virginia as foreman of construction where he helped to build the now famous Hastings Station, the first natural gas gasoline absorption plant in the world.

Upon the completion of this task, Mr. Tonkin was appointed assistant superintendent of all compressing stations in 1913. He held this position until 1920 when he was appointed superintendent of compressing stations for the Hope Natural Gas Co., Hope Construction & Refining Co., River

Gas Co., Connecting Gas Co., and the Reserve Gas Co.

In 1927, Mr. Tonkin became assistant general superintendent of these companies and held this position until September, 1932, when he was elected vice-president and chief engineer. In the following year, Mr. Tonkin was elected a director of the Hope group.

Mr. Tonkin is a member of the American Gas Association.

Wisconsin Public Service Elects New Director



A. F. Davey

J. P. PULLIAM, president, Wisconsin Public Service Corporation, has announced the election of A. F. Davey, Sheboygan, as a director of the company in place of H. C. Cummins, Chicago, resigned.

Mr. Davey is manager of the Sheboygan-Manitowoc division and began

his work with the Public Service Company on February 1, 1912, as superintendent of production in the Green Bay gas plant. He was previously employed at the Western United Gas and Electric Company at Aurora, Illinois. After a short time at Green Bay he was placed in charge of the entire gas department at this location.

When the Sheboygan Gas Light Company was acquired in 1915 Mr. Davey was placed in charge of operations there.

In addition to his duties at Sheboygan Mr. Davey is in charge of operations in the Manitowoc division and acts as advisor in technical problems at all gas plants in the company.

He is a member and past president of the Sheboygan Rotary Club, past president of the Association of Commerce and president and director of the Sheboygan Building and Loan. In the industry he has served on many committees in the American Gas Association and Wisconsin Utilities Association. He has been chairman of the Gas Operating Section and chairman of the Merchandising Section of the Wisconsin Utilities Association, of which organization he is a veteran member.

Retires from Presidency of Hope Natural



H. C. Cooper

H. C. COOPER, president of the Hope Natural Gas Co. and affiliated companies announced his retirement and the elevation of L. L. Tonkin to the presidency at a testimonial dinner given in his honor in the Duquesne Club, Pittsburgh, Pa., on Monday evening, Feb. 20.

Mr. Cooper is retiring at the age of 65 after spending practically all of his business life in the gas and oil industry. In the early days he superintended the construction of an oil pipe through New York and Pennsylvania and another in Indiana.

In 1910 he joined the Hope Natural Gas Co. and the Peoples Natural Gas Co. at Pittsburgh, Pa., as engineer. Two years later he went to Clarksburg, W. Va., as general superintendent for the Hope Natural Gas Co. He retained that position until July 1, 1918, when he was appointed chief engineer for the group of companies which includes Hope Natural Gas Co., Peoples Natural Gas Co., Reserve Gas Co., Hope Construction & Refining Co., Connecting Gas Co., and the Marion Oil Co., with offices at Pittsburgh, Pa.

In 1928 Mr. Cooper was named vice-president of the Hope Natural Gas Co. and its West Virginia affiliates and, in 1933, became president and general manager.

Mr. Cooper is considered an authority on gas and oil engineering, and has contributed many valuable papers on these subjects. For many years he has been chairman of the Technical and Research Committee of the Natural Gas Section of the American Gas Association and was the recipient of the Munroe Award at last year's annual convention. The award was made to Mr. Cooper for outstanding leadership of the natural gas industry's research program and other pioneer contributions to the development of the industry.

Schum Elected President of River Gas Company

HAROLD B. SCHUM, assistant treasurer of the Hope Natural Gas Co., group of gas producing and distributing companies since July, 1933, has been elected president of the River Gas Co., one of the most important of the Hope group. Mr. Schum has been in the employ of the Hope Natural Gas Co. for the past 29 years.

J. C. Cross, manager of the accounting department of the Hope Natural Gas Co., Pittsburgh, Pa., will succeed Mr. Schum as assistant treasurer of the Hope Natural Gas Co. and the Hope Construction & Refining Co.



Employees of the Consolidated Edison Co. of New York who have been honored recently by the award of McCarter Medals and Certificates for outstanding acts of life saving. Left to right, top row: Harry V. Bennett, James Cooney, Frank J. Daller, Edward F. McCormack, Peter P. Campbell. Bottom row: John T. Kiely, Edward A. Pittfield, Charles Hellstern, Thomas P. Haran

Philadelphia Promotes Frazier and Postles

TWO promotions were announced recently by The Philadelphia Gas Works Company.

Charles H. Frazier, Jr., was appointed manager of the Internal Audit Department and John V. Postles was appointed engineer of works. Mr. Frazier joined Philadelphia Electric Company in 1930. From 1931 until his recent appointment he was associated with The United Gas Improvement Company in the Practice and Methods Department and later in the Executive Division.

After valuation work in other U.G.I. system properties in 1911 and 1912, Mr. Postles began his career with the Philadelphia Gas Works. He served in various positions and in 1925 was appointed assistant to the engineer of works, which position he held at the time of his recent appointment. Mr. Postles was chairman of the Technical Section of the American Gas Association during the year 1937-1938.

Bright Future Pictured for Domestic Sales

THE future for domestic gas sales is exceedingly bright. With improved economic conditions, the American Gas Association's national advertising, new sales programs, modern and efficient appliances, home planning activities, and the expected substantial increase in the home construction field, it is expected that the 1939 sales of gas for domestic purposes will continue their 1938 upward trend.

The following figures, which are the result of a recent survey made by Dr. Daniel Starch, are important:

- There is a market for 1,000,000 house

heating customers in manufactured gas territory and 700,000 in natural gas territory (after making reasonable allowances for mild climate, low buying power and oil burner use) which would provide an additional revenue of \$202,500,000.

Winners Announced in National Tie-In Advertising Contest



W. R. Squier

American Gas Association's 1938 national campaign.

The prizes awarded to the advertising managers of the various companies were as follows:

First prize, \$200, W. R. Squier, of Washington Gas Light Co.; second prize, \$100, R. T. Ratliffe, of Kansas City Gas Co.; third prize, \$100, Jay C. Barnes, of New Orleans Public Service Inc.; fourth prize, \$100, Gerald A. Higgins, of Boston Consolidated Gas Co.; fifth prize, \$50, J. Lyman Gollegly, of Central New York Power Corp., Syracuse; sixth prize, \$50,

F. E. SELLMAN, chairman of the contest committee of the Association of Gas Appliance and Equipment Manufacturers, has announced the winners in the contest for advertising managers of gas utilities and combination companies whose local advertising best tied in with the

Robert Kanze, of Illinois-Iowa Power Co., East St. Louis, Ill.; seventh prize, \$50, Henry Lawson, of Springfield Gas Light Co., and eighth prize, \$50, Dale Remington, of Wisconsin Public Service Corp., Green Bay, Wis.

The judges in the contest were Henry Obermeyer, assistant vice-president of Consolidated Edison Co. of New York; Earl Pearson, general manager of the Advertising Federation of America, and Raymond C. Mayer, public relations counsel. Charles Byrd, of the Association of Gas Appliance and Equipment Manufacturers, was secretary to the contest committee.

Mr. Squier's prize-winning entry was cited for "distinctiveness and originality in presenting the ideas of the national campaign and applying them to the local merchandise of gas appliances."

The second and third prize winners were cited for "variety of media used and extensive coverage," and the fourth winner was selected for the "element of originality and general attractiveness."

The eight companies whose advertising managers were cited as winners will get certificates attesting the award.

- There is a market for 1,625,000 gas refrigerators (after making allowance for buying power and present saturation of automatic refrigeration) which would add \$24,000,000 of revenue.
- There is a market for 3,260,000 automatic gas water heaters (after making allowance for economic factors, opportunity and present saturation) with another \$57,000,000 of revenue.

The above totals nearly \$300,000,000 in the domestic field over and above the present \$770,000,000, or a 40 per cent increase. What industry would not celebrate and get busy, if its market were only two-thirds saturated.

Whitehead Founder Dies

JUDSON JAY WHITEHEAD, founder and president of the Whitehead Metals Products Company, Inc., now a wholly owned subsidiary of The International Nickel Company, Inc., died March 1.

Mr. Whitehead organized his own company in 1914 in Boston for distributing non-ferrous metals in commercial shapes. In 1916 he became a distributor of monel for International Nickel and this connection led to his company becoming a subsidiary of International Nickel.

Following his connection with the latter company, Mr. Whitehead moved his headquarters to New York.

AFFILIATED ASSOCIATION Activities

Wisconsin Utilities Association

A RECORD-BREAKING number of delegates received renewed inspiration and a host of ideas at the annual convention of the gas section of the Wisconsin Utilities Association, March 13-14, Milwaukee. A total of 270 persons registered for the convention. Bruno Rahn, Milwaukee Gas Light Company, president of the Association, opened the first session with an encouraging summary of the gas industry's progress in Wisconsin. Speakers at this session included B. T. Franck, Edwin Vennard, A. M. Beebee, H. D. Valentine, Lawrence R. Foote and Harry Swenson. Part of Mr. Beebee's scholarly paper on the superiority of gas service is published elsewhere in this issue of the *MONTHLY*.

The technical and commercial sessions on Tuesday, March 14, brought out many splendid papers. Of special interest was a report by Professor O. L. Kowalek, University of Wisconsin, on pilot light outages. A symposium on water heater sales experiences was a feature of the commercial session.

G. A. Anderson, gas superintendent of Wisconsin Public Service Corp., Sheboygan, Wis., was elected chairman of the Technical Division. Other officers elected at the convention were: H. E. Sweet, gas engineer, Wisconsin Power & Light Co., Madison, vice-chairman, Technical Division; L. A. Dubberke, Milwaukee Gas Light Co., chairman, Commercial Division; Paul DeLeon, Wisconsin Power & Light Co., Madison, vice-chairman, Commercial Division.

New Jersey Gas Association

CONRAD N. LAUER, president of the American Gas Association, will be one of the principal speakers at the twenty-eighth annual meeting of the New Jersey Gas Association at the Berkeley-Carteret Hotel, Asbury Park, N. J., April 28. Mr. Lauer will review the gas industry's cooperative program to increase the gas load. Alexander Forward, managing director of the Association, will be another prominent speaker at the meeting.

A short business session will be opened by B. A. Seiple, president of the New Jersey Gas Association. A feature of this session will be a talk by Billy B. Van, nationally known philosopher and lecturer. His topic will be "Yankee Adaptability in the Gas Industry."

The theme of the afternoon program is entitled "Seeing Is Believing." The first part of the program consists of the Home Service Committee placing an uncooked meal in a CP gas range installed on the stage. The thermostat will be set and the cooking of the meal started. H. P. J. Steinmetz, Public Service Electric & Gas Co., will then speak on "New Jersey's Gas Industry and the New York World's Fair." Following Mr. Steinmetz, Miss Hilda M. Torrop will discuss the employee's responsibility to his job. A third speaker will talk on the "Capitalization of Customer Complaints."

The second part of the program will be presented by R. S. Agee, Association of Gas Appliance and Equipment Manufacturers. After reporting on the progress of the CP range campaign, Mr. Agee will remove the completely cooked meal from the range.

A banquet will be held in the evening. Appropriate entertainment has been planned for this affair.

Indiana Gas Association



Dean H. Mitchell

panies and a number of outstanding speakers.

Dean H. Mitchell, Hammond, president of Northern Indiana Public Service Company, is president of the association. Paul A. McLeod, of the Public Service Company of Indiana, is vice-president, and H. W. Thornburg, of the Central Indiana Gas Company, holds the post of secretary-treasurer.

The convention will hear reports of association officers, including the president's address, at the Monday morning session. R. S. Agee, sales promotion manager of the Association of Gas Appliance and Equipment Manufacturers, will speak on "The CP Range Program."

Monday afternoon will be devoted to sectional meetings for persons engaged in technical, accounting and sales activities.

A report probably also will be made on the successful advertising program which the committee engaged in last year. The program was concentrated entirely in daily newspapers.

The convention banquet will be held Monday evening.

Because gas has been chosen as the fuel for cooking at the New York World's Fair, a speaker to be provided by the American Gas Association will speak on this subject Tuesday forenoon, along with a representative of Purdue University, from which a number of leaders in the industry were graduated. Other discussions will include personnel training, water heater sales, economics and home heating.

Pennsylvania Gas Association



E. E. Mensch

THE annual convention of the Pennsylvania Gas Association will be held at Skytop, Pa., on Tuesday, May 2, to Thursday, May 4, inclusive, and will consist of two evening and two morning sessions. L. B. Eichengreen, vice-president and chairman of the meetings of the Papers & Program Committee, has arranged a very attractive series of papers which will take up distribution, accounting, customer and employee relations, production, and new business. The sessions will be presided over by E. E. Mensch, president of the association.

The sessions will open Tuesday evening at the annual dinner at which the main speaker will be James Gheen, well known humorist and philosopher. On Wednesday evening Conrad Lauer, president of the American Gas Association, and Gerald Steadman will be the speakers.

The tentative program for the two morning business sessions is as follows: Wednesday, May 3, "The Use of Pressure Control Fittings and High Pressure Distribution," by R. L. James, Harrisburg Gas Company; "The Design and Operation of Regulator Stations," by S. A. Kuntz, Philadelphia Electric Company; "Continuing Property Records," by L. C. Purcell, vice-president, Pennsylvania Power & Light Company; "Customer History Record," by William A. Hill, Delaware Power & Light Company, and "What the Customers Think of Utilities," by Elmo Roper, of *Fortune Magazine*.

Thursday, May 4: "Flood Conditions at Providence During the Recent Hurricane," by R. L. Fletcher, Providence Gas Company; "The Gas Industries' Court of Flame," by Hugh Cuthrell, vice-president, The Brooklyn Union Gas Company; "What Our Competition Has To Meet Tomorrow," by R. J. Rutherford, Worcester Gas Light

Company, and president of the New England Gas Association; "Foundation of Tomorrow's Marketing," by Gerald Steadman, and "Tomorrow We Sell," by Walter C. Beckjord, vice-president and general manager of Columbia Gas & Electric Corporation.

Maryland Utilities Association

THE annual spring convention of the Maryland Utilities Association will be held on April 14 at the Lord Baltimore Hotel, Baltimore. Three meetings will be held in the morning, one each for the gas, electric and transportation groups.

Charles C. Krausse, Consolidated Gas, Electric Light and Power Co., Baltimore, is chairman of the gas group meeting. One of the principal speakers at this meeting will be Eugene D. Milener, American Gas Association, who will point out how individuals can benefit most from A. G. A. sales promotional activities. J. Paul Jones, Consolidated Gas, Electric Light and Power Co., will speak on "Some Sales Promotional Phases in Securing and Holding Gas Load."

Missouri Association of Public Utilities

THE thirty-third annual state convention of the Missouri Association of Public Utilities will be held April 12, 13 and 14 in Kansas City, Mo., at Hotel Muehlebach. The membership of the association includes virtually all of the privately owned electric, gas and water companies in Missouri.

All available past-presidents of the Association will be seated at the head table as guests of honor at a Get-Together Luncheon at noon in Hotel President. The present president, Chester C. Smith, will preside.

Among the speakers will be: Thomas R. Weymouth, New York City, chairman, Natural Gas Section, American Gas Association; C. W. Kellogg, New York City, president, Edison Electric Institute; C. B. Huntress, New York City, Republic Coal & Coke Co.; Nathaniel Leverone, Chicago, Illinois, Automatic Canteen Co.; Frank E. Fehlman, New York City, advertising counsel; Ralph W. Carney, Wichita, Kan.; Ben C. Adams, Kansas City, Mo., Gas Service Co.; and Mayor Bryce B. Smith of Kansas City.

Some of the subjects will be: "Helping Ourselves," "Gas Moves Forward," "What Is Before Us," "The Recovery Problem," "The Progress of Illumination," "Federal Competition and Its Effect," "The Man Who Sells," "Advertising and Its Relation to Public Utilities."

D. W. Snyder, Jr., will preside at an Open Forum for the discussion of timely utility subjects. A Safety Meeting and round table discussion of accident prevention will be in charge of A. A. Rall, Kansas City.

CONVENTION CALENDAR

APRIL

Apr. 10-11 Arkansas Utilities Association
Hot Springs National Park,
Ark.

10-12 Mid-West Gas Association
Fort Des Moines Hotel,
Des Moines, Iowa

12 New Jersey Gas Association
Berkley Carteret Hotel,
Asbury Park, N. J.

12-14 Missouri Association of Public Utilities
Muehlebach Hotel, Kansas City, Mo.

14 Maryland Utilities Association
Lord Baltimore Hotel, Baltimore, Md.

17-19 A. G. A. Distribution Conference, Technical Section
Palmer House, Chicago, Ill.

18-20 Southwestern Gas Measurement Course
University of Oklahoma, Norman, Okla.

20-21 A. G. A. Accounting Conference
The Greenbrier Hotel,
White Sulphur Springs,
W. Va.

22-25 British Commercial Gas Association—Annual Conference
Brighton, England

25 New England Gas Association—Accounting Division
Malden, Mass.

MAY

May 1-4 U. S. Chamber of Commerce
Washington, D. C.

2-4 Pennsylvania Gas Association
Lodge of Sky Top Club,
Sky Top, Pa.

8-9 Indiana Gas Association
Fort Wayne, Ind.

8-11 A. G. A. Natural Gas Section, Annual Convention
Mayo Hotel, Tulsa, Okla.

8-12 National Fire Protection Association
Chicago, Ill.

15-16 A. G. A. Executive Conference
Fairmont Hotel, San Francisco, Calif.

22-23 A. G. A. Hotel, Restaurant and Commercial Sales Conference
Hotel St. George, Brooklyn, N. Y.

22-24 A. G. A. Joint Production and Chemical Committee Conference, Technical Section
Rochester, N. Y.

24-26 Association of Gas Appliance and Equipment Manufacturers
Roosevelt Hotel, New York,
N. Y.

JUNE

June 6-7 Canadian Gas Association
Hotel Connaught, Hamilton, Ontario

6-8 Edison Electric Institute
Waldorf Astoria Hotel, New York, N. Y.

6-9 The Institution of Gas Engineers, Annual Meeting
London, England

9 Empire State Gas & Electric Association—Gas Operating Group
Park Central Hotel, New York, N. Y.

18-22 Public Utility Advertising Association, Annual Convention
New York, N. Y.

19-22 American Home Economics Association Convention
Gunther Hotel, San Antonio, Texas.

29-30 July 1 Michigan Gas Association
Grand Hotel, Mackinac Island, Mich.

AUGUST

Wk. 13 American Transit Association, Annual Convention
San Francisco and Los Angeles, Calif.

23-25 National Association of Railroad and Utilities Commissioners
Seattle, Wash.

28-31 American Dietetic Association
Ambassador Hotel, Los Angeles, Calif.

SEPTEMBER

Sept. 5-7 Pacific Coast Gas Association
Fairmont Hotel, San Francisco, Calif.

9 Gas Industry Day—Golden Gate Exposition

20-23 American Trade Association Executives
Westchester Country Club, Rye, N. Y.

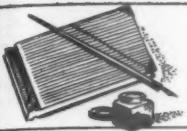
OCTOBER

Oct. 9 Gas Industry Day—New York World's Fair

9-12 American Gas Association, Annual Convention
New York, N. Y.

Wk. 23 National Metal Congress and Exposition*
Chicago, Ill.

* Includes exhibit sponsored by A. G. A. Industrial Gas Section.



Accounting SECTION

H. A. EHRMANN, Chairman
F. B. FLAHIVE, Vice-Chairman
H. W. HARTMAN, Secretary

Spring Accounting Conference Offers Constructive and Timely Program

THE manifold problems of the accountants in the gas industry will receive undivided attention at the Accounting Section's Spring Conference to be held at the Greenbrier Hotel, White Sulphur



H. A. Ehrmann
Chairman, Accounting Section

Springs, West Virginia, on April 20 and 21. Importance of the conference is emphasized by the fact that the accounting profession today recognizes as accepted practices a large number of new ideas which have been introduced in the past few years.

In shaping the program, the Planning Committee has recognized these changed

conditions and offers a program of practical

and timely interest.

In addition to the formal papers which will be presented, ample time has been provided for full and informative discussion of any subject affecting this phase of the industry. Sessions have been arranged for mornings and evenings, leaving the afternoons free for recreational activities. Splendid facilities and natural recreational advantages make White Sulphur Springs an ideal setting for the conference.

The first Spring Conference of the Accounting Section in eight years, this two-day meeting offers an excellent opportunity to keep up-to-date on the latest accounting methods.

Following is the detailed program for the Conference:

Thursday Morning, April 20

10:00 o'clock

OPENING REMARKS

H. A. Ehrmann, Chairman,
Accounting Section,
New York, N. Y.

- All member company delegates of the American Gas Association have received complete information on the Conference, including instructions regarding hotel reservations, transportation, and registration.
- Delegates are urged to select a train for arrival early Thursday morning, so that they will have ample time to register before the opening of the Conference.

UNIFORM SYSTEM OF ACCOUNTS

H. C. Hasbrouck,
Utility Management Corporation,
New York, N. Y.

Progress Report of the Committee—Questions of the interpretation of the National Association of Railroad and Utilities Commissioners and the Federal Power Commission Uniform System of Accounts in its practical application—Proposals for modification of these codes on points found in practice to be unworkable, unduly burdensome, or actually misleading—Questions and suggestions which will tend to produce greater uniformity, clarity, and simplicity of accounting practice by gas utilities are invited, and should be sent direct to the Secretary of the Accounting Section at Association Headquarters in order to receive attention at this Conference.

ACCOUNTING AND PROPERTY RECORDS IN THE REGULATION AND MANAGEMENT OF PUBLIC UTILITIES

Hon. Nelson Lee Smith, President,
National Association of Railroad and
Utilities Commissioners,
Public Service Commission of New
Hampshire,
Concord, New Hampshire.

The New Hampshire Public Service Commission promulgated a Uniform Classification of Accounts effective January 1, 1935, for electric utilities which incorporated requirements for a continuing property record. The results obtained from this record, and its successful application, was to a large degree instrumental in a similar requirement being incorporated in the revised classification for gas utilities made effec-

tive January 1, 1939. Mr. Smith's discussion is therefore exceedingly timely as presenting the views of a Commissioner whose experiences and relations with utilities under his jurisdiction have brought about the successful institution of Continuing Property Records.

THE LINE BETWEEN MAINTENANCE AND CAPITAL ITEMS

L. Y. Meneely,
Consolidated Edison Company of New
York, Inc.,
New York, N. Y.

Not as straight as the well-known shortest distance between two points.

METHODS OF COMPUTING OVERHEAD CONSTRUCTION COSTS

F. Warren Cooper,
Public Service Electric & Gas Company,
Newark, N. J.

Methods used by several companies will be explained with particular emphasis on the bases of computing the amounts and rates.

METHODS OF ACCOUNTING FOR TAXES

E. I. Bjork,
The Peoples Gas Light & Coke Co.,
Chicago, Illinois.

Is there but one sound and practical basis for computing tax accruals?—Is the annual provision the important factor, or are the monthly or quarterly provisions equally significant?—Can taxes be allocated as required by the Uniform System of Accounts with reasonable accuracy?—Should any further allocations be made for internal purposes?—Does the use of a tax clearing account serve a worthwhile purpose?—How should taxes be treated in reports to stockholders?

Thursday Evening, April 20

8:00 o'clock

INTERPRETATIONS AND USAGE OF THE VARIOUS TYPES OF UNITS REQUIRED FOR CONTINUING PROPERTY RECORD

J. L. Sunday,
Philadelphia Electric Company,
Philadelphia, Pa.

What is—An Inventory Unit—A Pricing or Property Record Unit—A Retirement Unit?—What are Major and Minor Items?—What is an Operating Unit—Township or Pricing District?

SOME PRACTICAL ASPECTS OF COST DETERMINATIONS

Bernard S. Rodey, Jr.,
Consolidated Edison Company of New
York, Inc.,
New York, N. Y.

Meaning of Original Cost improperly so called—Elements of Original Cost—Costs not previously included in Plant accounts—Specific cost problems and solutions.

WORK ORDER SYSTEMS

A. V. Schwartz,
United Fuel Gas Co.,
Charleston, West Virginia.

Functions of a Work Order System—Uses of Specific orders and Annual orders—Requirements of Regulatory Bodies—Scope of individual work orders with respect to Property Record Requirements—Use of inter-departmental orders and other sub-orders within the limits of the authorization—Controlling Expenditures through Work Orders.

DISTINCTION BETWEEN GAS PRODUCTION, TRANSMISSION AND DISTRIBUTION PLANT

E. Wressel,
Northern Indiana Public Service Co.,
Hammond, Indiana.

Utility Plant Analogy—Why Plant Distinction?—What is Production Plant?—Functional Use versus Location—Co-ordination of Storage Plant—Transmission Plant—Distribution Plant.

PROPERTY RECORDS—A NEW FIELD OF ENDEAVOR

Stuart F. Kosters,
Stone & Webster Engineering Corp.,
Boston, Massachusetts.

What is a Property Record?—Is a Property Record a necessity for the average Utility Company?—Advantages—Disadvantages—Type of record to adopt—Responsibility in the development—Responsibility for the operation—Functions of the Operating Department—The accountant in the operation of this record.—What part does the engineer play?

Friday Morning, April 21

9:00 o'clock

DEPRECIATION ACCOUNTING

H. C. Hasbrouck,
Utility Management Corporation,
New York, N. Y.

Report of Committee, including progress made to date of meetings held with the Special Committee on Depreciation of the National Association of Railroad and Utilities Commissioners.

CONSISTENCY IN ACCOUNTING FOR DEPRECIATION

F. B. Flahive,
Columbia Gas & Electric Corporation,
New York, N. Y.

Some thoughts on the importance of depreciation accounting—both the reserve and the methods of providing it.

"REMAINING LIFE" METHOD OF DETERMINING ANNUAL DEPRECIATION CHARGES

C. E. Packman,
Middle West Service Company,
Chicago, Illinois.

What the "Remaining Life" Method is, how it is distinguished from the "Straight Line" Method, and how it may be used to provide reasonably prompt adjustment to changing conditions.

BUSINESS RESEARCH IN PUBLIC UTILITIES

Stanley P. Farwell, President,
Business Research Corporation,
Chicago, Illinois.

Some Pressing Problems of Industry, including Public Utilities—Principal Present-Day Objectives—Business Research—A Tool for Management—Ways of Carrying on Business Research—The Place of the Accountant in Improvement Work—Effective Organization of Accounting Departments—Some Important Modern Tools of Management—The Consulting Management Engineer as an Aid to Management.

CUSTOMER BOOKKEEPING PLANS OF THREE COMPANIES

R. B. Milne,
Columbia Gas & Electric Corporation,
New York, N. Y.

Substantial economies and other advantages have been realized by three companies which have recently made changes in their customers' accounting procedures. The purpose of the committee report is to present a description of these plans.

(A) UNIT DESK PLAN

O. Ullery,
The Ohio Fuel Gas Company,
Columbus, Ohio.

A brief description of the "Unit Desk Plan," under which all of the routine work for a given group of accounts is assigned to one bookkeeper.

(B) STATION PLAN

J. A. Williams,
Niagara Hudson Power Corporation,
Syracuse, N. Y.

A brief description of the "Station Plan," which plan is based on specialization in which one group of clerks specializes in giving account information, another cash posting information, etc.

(C) UNIT GROUP PLAN

A. W. Fyfe,
Consolidated Edison Company of New
York, Inc.,
New York, N. Y.

A brief description of the "Unit Group Plan," under which plan all the customers' bookkeeping work for a given number of accounts is done by a given group of employees.

GETTING RESULTS FROM PERSONNEL

H. F. Willis,
The Peoples Gas Light & Coke Co.,
Chicago, Illinois.

Principles of developing leadership in supervisors—Its part in training personnel—Some of the results it can accomplish.

Friday Evening, April 21

8:00 o'clock

CUSTOMER ACCOUNTING AND CUSTOMER RELATIONS PROBLEMS

Chairmen

H. E. Cliff,
Public Service Electric &
Gas Company,
Newark, New Jersey.

H. F. Willis,
The Peoples Gas Light &
Coke Company,
Chicago, Illinois.

An open conference for the discussion of all subjects touching on customer accounting and customer relations problems—Feel free to air your problems—Among other things the Continuous Transfer of Meter Reading Records will be discussed by G. W. Fuchs of the Philadelphia Electric Company, Philadelphia, Pa.

SOUND FILM PICTURES—CUSTOMER RELATIONS

H. F. Willis,
The Peoples Gas Light & Coke Co.,
Chicago, Illinois.

The showing of a four reel sound film treating with modern trends in Customer Relations.—Manufactured by the Voca Film Corporation in consultation with the American Gas Association.

Public Utility Refunds

THE February issue (Number 1, Volume XV) of *The Journal of Land & Public Utility Economics* contains a nine-page article carrying the above title. Refunds on refund cases are presented.

The author, Floyd R. Simpson, instructor in Economics, School of Business Administration, University of Minnesota, states that refunds are "evidence of regulatory ineffectiveness and a most costly and wasteful method of gaining equity for utility consumers" and that "hope for eliminating refunds appears to be in the wider adoption of the temporary rate order."

The magnitude of the figures involved in the cases cited, and the procedure described as being necessary to handle the details, are staggering. For example, the Illinois Bell Telephone case began in 1923 and was closed in 1934. A special staff of 2000 clerks was required to handle the paper work relating to more than 45,000,000 receipts and payments were made to 1,495,974 subscribers. The amount ordered refunded was approximately \$18,900,000 and in the eleven year period twelve million dollars was collected under bond.

The second largest case noted is the 1906-1909 Consolidated Gas Company litigation involving nearly ten and a half (\$10,417,000) million dollars.

The total money ordered refunded, as shown in the table mentioned, to customers of the twenty-eight companies, amounts to approximately fifty-six and a half million dollars; as of October last about two and a half million dollars is still pending.



Commercial SECTION

F. X. METTENET, Chairman
DAVIS M. DEBARD, Vice-Chairman
J. W. WEST, Jr., Secretary

Gas Heating Equipment Available for New Homes



H. L. Whitelaw

THE manufacturers of gas-fired heating equipment have engineered, produced and field-tested heating equipment for all types of new housing so far projected. There is a wide diversity of type, size and price for buildings with or without basements, single dwellings, semi-detached or multiple-family units for centralized or decentralized systems.

The decentralized system we can consider our very own as gas is the only fuel that lends itself to automatic delivery to the point of use, and in a decentralized system each tenant in a multiple-family building has complete control over all mechanical services. This makes it possible for each tenant to maintain any temperature desired without interfering with the temperature desires of any other tenant.

Family Flat Installations

Boilers are manufactured in capacities to take care of two-room apartments, or flats, and up. The Washington Gas Light Co. has over 3,000 installations of decentralized hot water heating systems installed in two- and four-family flats. I would estimate the average income of these 3,000 families would not exceed \$2,500 a year. This is our market for many years to come.

I would like to refer you to the article written by James E. West of the Washington Gas Light Co. published in the December, 1938, issue of the A. G. A. MONTHLY. In this article Mr. West very frankly states their problem in getting this business started. Winter air conditioning equipment is available for apartments having a heat loss as low as 17,700 B.t.u.s per hour, or in other words an apartment of only 1½ rooms and up. Air conditioning units are available in wide-range capacities with either cast-iron or steel heating elements. Manufacturers have especially designed these decentralized heating units for installation in the kitchen or in a utility closet.

The best example of a decentralized heating system is represented by the Park Lake Apartments on the lines of the Boston Con-

Presented before Eastern Natural Gas Regional Sales Conference, Pittsburgh, Pa., March 2, 1939.

By H. LEIGH WHITELAW
New York, N. Y.

solidated Gas Co. where 151 separate winter air conditioning units are installed in closets provided for the purpose—one in each apartment. This installation has been described in our trade papers.

It is my understanding that there will be further articles published that will cover the experience of the owner, tenant and gas company with this operation during the present heating season. There are quite a few decentralized gas heating installations that are either installed or projected for 1939. Flexibility of such an installation needs no emphasis by me, but we must not overlook the fact that when such an installation is sold we get the whole domestic load—cooking, water heating, refrigeration and house heating.

For homes, single units designed by an architect for owner occupancy, with or without basements, in any price classification and of any size, there is a wide range of gas heating equipment available covering all known systems of heating. I would assume that in your territory the largest percentage of your gas heating sales are in this classification.

Speculative Builder Important

The builder of houses for sale, known widely as a speculative builder—he is the man we're after. He is ever conscious of price, but the progressive builder today has begun to realize that new homes are sold on features, and it is our job to convince him that the all-gas home affords more features and greater sales appeal to his prospects from the standpoint of health, comfort and convenience than any other features he can incorporate in his design. His operations will be very largely confined to homes costing from \$4,000 to \$12,000 and there is a wide range of gas-fired heating equipment available in all systems for the homes in the above classification.

For homes costing less than \$4,000, which will be occupied by families having a total income of, let us say, \$1,200 to \$2,000 a year, there are many houses in this price classification for which the floor furnace is the most practical equipment. There are several other types of space heating equipment that from a cost standpoint are practical for installation in low-cost housing. Therefore, in summing up, the manufacturers of gas-fired heating equipment, to my mind, have not lagged behind in designing,

not only for the present market, but also with an eye to future trends in building construction that may necessitate the designing of new equipment.

Our objective is clear, and that is the necessity of concentrating our attack on the architect, the speculative builder and those organizations responsible for the design and building of low cost housing, the mass market, whether of the prefabricated type or not.

To visualize the position of the gas companies in the Eastern Regional Natural Gas Sales Council, I have analyzed the latest figures collected by the Home Appliance Planning Bureau of the American Gas Association. Within the last month, they have written to every gas company in the Council, totaling over 2,600,000 meters, and requested from them the facts on gas sales in the new homes built in their territory in 1938. The responses are most interesting.

Trends in New Homes

Ten companies, representing three-quarters of a million meters, were in a position to furnish the information and were evidently in close contact with the latest trends in new homes. But what do these results show? Enough to startle any of you! Because, 5,660 new homes built in 1938 brought in only 1900 new house heating installations, I stress house heating. This is 33.9% of the new homes built in 1938. Yet the national percentage for natural gas territory was 66.7%. Only one in three of the new houses built in this territory went to gas even though it is almost axiomatic that everyone moving into a new house in 1938 wanted automatic heat, clean heat, and effortless heat. Only one out of three is going to enjoy this—the other two will have to struggle along with the old-fashioned methods in their new homes.

Now let us for the moment consider the sales of the other appliances. For these 5,660 new homes, 4,727 or 83.5% of the builders or owners installed gas ranges. The national natural gas percentage is 91%. Five thousand one hundred and nine or 90% installed gas-fired water heaters. The national natural gas percentage in this case is 92%. Seven hundred and thirty-five or 13% installed gas refrigeration. This is above the national natural gas percentage which is 10%.

I am sorry that we were unable to collect the figures for all of the companies represented in this Conference, for I question whether these figures are truly representative of the results of the entire area covered

by the Conference because it is possible that the non-reporting companies have not made a good showing.

The subject of my paper relates to the gas heating equipment available for new homes. However, I have taken the liberty of touching on a few facts on the general subject that I feel are relevant.

Mr. Mettenet in his address before the Mid-West Regional Gas Sales Conference on February 9 and again this morning made this statement, which to my mind is most pertinent to the subject under discussion, and that is, quoting Mr. Mettenet, "As new construction goes, so goes the gas business." In one short line Mr. Mettenet sums up our problem, not only for increasing our business, through the completely gas-equipped home that will be built in 1939, but also the protection of the business we already have.

The gas utility and the manufacturer have a common objective, that of increasing the use of gas for all domestic services.

This is so true that no manufacturer interested in the sale of one type of appliance can afford to ignore the competitive inroads on any part of the domestic load.

Concentrate on New Construction

This fact highlights the necessity of concentrating our 1939 sales activities on those who are responsible for new construction, and it will not take a decade to prove if we have been successful in demonstrating that gas is the modern fuel for all domestic services that we know it to be.

The leadership to this end belongs to the industry as a whole and we must lean more heavily on our respective associations for a more rapid interchange of ideas and experiences in the field of new construction. By inter-company cooperation as well as inter-association cooperation we can confound our competition and establish gas in new construction for all classes—government, speculative and private. Only in this way can we protect the healthy growth of our business and more important still, consolidate our position by increasing our business with our present customers.

The speculative builder must receive our special attention. The foundation of the gas heating business for years to come lies in our ability to sell the builder, as the new homes built and sold by him are for an income class group to which gas heating has a greater appeal than to any other.

Our ability to project the builder's vision into the merchandising possibilities of home comfort through the use of gas as a fuel will be the measure of our success.

Through a survey we have confirmed the fact that the builder's weakness is in his sales department, not in his ability to purchase materials, handle labor and erect houses. The most valuable service that has been contributed by many gas utilities to the builder has been through the development of the builder's sales organization, teaching them how to dramatize the features of a development so that the builder's salesmen can in turn dramatize these features to the prospective owners. We cannot afford

to have gas-equipped homes in any development move slowly and we cannot consider our sales complete until the houses are sold.

The builder is just as vulnerable to one of the first principles in selling as any other prospective customer, and that is represented by our sincere interest in his business through our knowledge of it.

Therefore, by persevering cultivation backed by the product you are selling and backed by your individual companies, you have more to offer and can render a greater service to the builder than any other or-

ganization he does business with. I sometimes wonder in selling gas to the builder if we are forceful enough in driving into his consciousness when he installs gas in the homes of his development that he is passing on to the owner a perpetual service outlasting his lifetime. We all know that there is no competitive substitute for this service and there is no competitive service that can make similar claims. I will close my remarks by quoting Mr. Mettenet again—"As new construction goes, so goes the gas business."

National Gas Sales Mobilization Cited at Eastern Conference



R. E. Williams

THAT the gas industry has mobilized nationally to take the sales offensive was strongly emphasized by R. E. Williams in his opening remarks as chairman of the Eastern Natural Gas Regional Sales Council before the gas sales conference held in Pittsburgh, Pa., March 2 and 3. The conference, which is sponsored by the Commercial Section, brought out a large amount of valuable and useful information on sales problems.

Sales Offensive Urged

While we inherit an industry technically mature, we must adjust our sales program to the pulse of public opinion, Mr. Williams stated. Pointing to changes in cooking habits and the restless fuel preference fostered by the gas industry's competitors, he asserted that the homemaker's attitude trends are national. Consequently, the gas industry must think and act nationally with the A. G. A. and A.G.A.E.M. as spearheads in the national sales offensive. Mr. Williams referred to the 15 committees of the Commercial Section who were attacking the sales problems from a national viewpoint.

Leaders of the Association's program to increase sales who presented first-hand information to the delegates, were the following committee chairmen: Frank Houston, Domestic Range Committee; John Clark, Water Heating Committee and Walter C. Beckjord, Housing and Realty Projects. The case for national advertising was presented most effectively by C. E. Bennett, of Pittsburgh, a member of the Committee on National Advertising. The Refrigeration Committee's 1939 plans were outlined by O. J. Haagen, of Columbus, Ohio, a member of that committee.

As chairman of the important new Committee on Housing and Realty Projects, Mr. Beckjord, who is a vice-president of the

American Gas Association, made an outstanding address on the subject of "Gas in New Homes and Housing Developments." Mr. Beckjord's significant remarks were the highlight of the conference.

F. X. Mettenet, chairman of the Commercial Section, delivered the keynote address in which he stressed the vital necessity of sound selling methods. The gas heating equipment available for new homes was discussed by H. Leigh Whitelaw, of New York, in a timely paper which is reproduced in this issue.

A feature of the conference was a home service forum led by Hulda Ungericht, home service director, The Ohio Fuel Gas Co., and participated in by Flora G. Dowler, home service director, Binghamton Gas Works, and Ruth Acton, home service director, Dayton Power and Light Company. An excellent CP range demonstration was staged by Louise McFarland, of The Ohio Fuel Gas Company. An informative paper on planned kitchens was presented by Ada Bessie Swann, of *Woman's Home Companion*.

"Action speaks louder than words" was the theme of a skit demonstrating how to promote gas service in 1939 American kitchens. It was presented under the direction of V. L. Black, Christy Payne, Jr., and W. L. Hutcheson, all of Pittsburgh. Preceding the skit, Howard Williams, of New York, described the A. G. A. sales training courses.

The subject of "Promoting Non-Residential Heating" was effectively presented by W. R. Lacey, of Cleveland, Ohio. A highly inspirational address by E. M. Tharp, vice-president and general manager of The Ohio Fuel Gas Company, concluded the conference.

Leaks

In a Paris apartment house, police investigated the suspicious circumstance of ten gas-pipe leaks in the same apartment within a few weeks. A maid, arrested, confessed that she had caused nine of the leaks because she fell in love with the plumber who repaired the first one.

—Time, Mar. 13



Industrial Gas SECTION

F. H. TREMBLY, Jr., Chairman
F. T. RADNEY, Vice-Chairman
E. D. MILENER, Secretary

Practical Rates for Industrial Gas Service



C. F. deMey

TO DAY, in our efforts to build up total sales to former levels, we are leaning heavily on our industrial markets. There is no question but that without these industrial trials sales such net earnings as are now being obtained by the gas industry would be greatly lowered and, in

many instances, entirely wiped out. Therefore, industrial sales can be regarded as an essential part of our industry, and, if I may hazard a prediction, will be of increasing importance in the future.

Close Cooperation Essential

The problem of retaining this load and increasing its value to the industry lays heavily upon both our industrial sales and rate engineers. It is not to be expected they can do their best work unless their efforts are coordinated and a very close contact and mutual confidence built up between them. This recalls a statement made to me some years ago by an industrial sales engineer. He said that the rate and sales departments were engaged in a kind of a game in which the rate department made the rules and the sales department did its best to break them and not get caught.

Obviously, an attitude of this kind prevents that close cooperation essential in these times to reach our common objective which is to sell the largest volume of gas consistent with the costs of delivery and competitive conditions. That, I take it, is the job before us, and unless our industrial sales give consideration to costs of delivery and competitive conditions, they will fall short of full accomplishment.

I wish to emphasize the fact that to sell industrial gas the competitive conditions of sale should be considered along with the cost of delivery. The value of our service to industrial customers is measured by the cost of equivalent service from other sources. Whenever such value is in excess of our costs, a sale becomes possible, and we are then in position to establish a rate for such sale. Thus, the sales and rate departments must enter into partnership in the development of industrial gas rates.

Presented at A. G. A. Conference on Industrial Gas Sales, Cleveland, Ohio, March 27-28, 1939.

By C. F. deMey

*The Ohio Fuel Gas Co., Columbus, O.
Chairman, A. G. A. Rate Committee*

If the two departments do not have free access to one another, it is very likely that profitable sales are being missed. The rate man must get the sales viewpoint before he can give the last word on any prospective load. It is not merely the handing over of complete competitive fuel data, load characteristics, and other factual information which will enable him to work out practical solutions for industrial sales problems. He should be given every reason which is favorable to any proposal. In other words, I believe rate engineers can do better work if they are inoculated with the optimism and aggressiveness which is so essential to salesmanship. However, they should remain true to their calling; that is, they must weigh carefully all of the factors connected with the operations of their companies so that their recommendations will be sound from the company's viewpoint.

Rate Restrictions

It is the problem of the rate engineer to devise a system of rates for his company within the limitations of cost on one hand, and competitive fuel prices on the other, which will allow of as great a market coverage as can be obtained without overstepping regulatory provisions.

For the smaller customers in the manufactured gas industry, a general industrial rate of simple form usually meets all of these requirements, while in the natural gas industry the regular residential-commercial rate may be satisfactory.

As additional business which cannot be obtained with existing rates is sought, lower rates are required to reach further into the more competitive fields, and the margin between selling price and cost decreases. To obtain these latter increments of load and still secure an adequate margin of net earnings requires an accurate knowledge of the cost of such added sales and their effect on the existing operations of the company.

This leads us to introduce variations in existing rates and additional rates which may seem confusing and difficult to sell to our customers. Doubtless, many industrial sales engineers feel the same way about the rates of their companies.

Let us digress a moment so that we may understand the reasons for such complexity. Utility companies are subject to certain

restrictions in the conduct of their affairs which largely account for the development of these involved systems of rates. We are partially shielded from the full competition of private enterprise.

We are given the right to use the public streets and, in most instances, we are the only company selling gas in the communities we serve. While we are not a monopoly in the strict sense of the word, yet our domestic and many of our commercial customers cannot turn to another vendor of gas or to other fuels as they may change freely from one grocery or department store to another for the purchase of identical articles. Likewise, once having made their investment in gas burning equipment, our customers cannot readily change to the use of other competitive fuels. In return for these privileges and freedom from the full effect of competition, our charges for gas are regulated in accordance with certain general principles:

- (1) Our earnings must be reasonable and should not be such that excessive returns are made on the value of our property devoted to the public service.
- (2) Our rates should not be unjustly discriminatory; that is, we should treat all of our customers alike. This does not mean that all customers should pay the same rate, or even be served under a single uniform rate schedule, but that each group of customers' contribution to the allowed return must be equitable in view of all of the factors involved in its service.

In the development of practical industrial rates, for the present we need not be concerned with possible excessive earnings, as few companies are in such a prosperous condition.

The restriction as to unjust discrimination, however, is largely responsible for the increase in number and complexity of rates as progressively competitive sales are obtained. It is fundamental that such discrimination will not occur if rate differentials are based on variations in cost of service. Thus, if our industrial customers' competitive fuel costs paralleled our costs, rate structures would be based entirely on our costs and would be relatively simple.

No industrial customer is interested in our costs, and few have costs which parallel ours; therefore, if we are to obtain such business, we are compelled to adopt rate forms which reflect the customers' costs as well as our own.

Here is where the forces of unrestrained competition are apt to run counter to the legal concept of unjust discrimination. How far can the gas company deviate from such legal restrictions under these conditions in order to encourage a wider use of its service? If a company is not earning an adequate return, should it not be allowed to abandon to some extent the artificial restraints of regulation in the fixing of rates to meet competitive conditions if it is certain that such rates will contribute an adequate amount over and above the cost of such service? Even if an adequate return is being made from all business, would not the additional earnings so obtained from industrial sales be available for rate reductions to non-competitive domestic customers?

Value-of-Service Factor

The regulatory authorities of most states have long recognized that rates based on these considerations are reasonable and not unjustly discriminatory. Many of our rates for residential and commercial service are based to some extent on value of service. It would appear, therefore, that we should not hesitate to make rates which partly reflect the competitive costs of our industrial customers if such additional business can not be obtained by rate forms which conform more closely to our cost factors. As long as such rates give us adequate coverage of our cost of service, we are on firm ground.

It is, of course, desirable to incorporate conditions in such rate plans or schedules which relate to our costs, such as minimum charges, load factor requirements, seasonal demand provisions, curtailment clauses, and others. In many instances, such clauses are a practical protection because many industrial customers feel that they should be given the lowest rate we have, irrespective of the conditions which led to its adoption.

It is the attempt to harmonize all of these conditions which has led to the multiplicity of rates which are often difficult to sell to our customers.

At the present time, it appears that we are headed toward even a greater number of rates than we have now. This is predicated on the fact that our residential load has not recovered commensurately with improved economic conditions, thus forcing us to go farther than ever in the development of industrial sales. Progress along this line should be aided by the development of such additional rates as may be required to get the business.

I do not believe we should object to a multiplicity of rates. The flexibility of such a rate structure enables us to cover our markets with greater efficiency and obtain larger earnings than would be the case if we deliberately limited the number of rates for the sake of simplicity and ease of administration. I am not unmindful of the added responsibility and work which such a program will place on our shoulders. However, this added burden is fully justified if additional sales at adequate rates are obtained thereby. Is this not a job which industrial sales engineers are willing to undertake, knowing why it should be done that way and the greater rewards forthcoming as a result?

Simple Rate Forms

The actual form of the rates, after we reach competitive levels below the range of our general service rates, should be kept as simple and easily understandable as possible. For example, various types of block rates with graded minimum charges are practical and widely used.

Demand rates are also used, particularly in the manufactured gas industry. These are more complicated than block rates since they involve the determination of the customer's demand. In addition, the tendency is to design such rates so that they reflect our costs at varying load factors a little too closely. When we consider that competitive fuel costs contain a relatively small proportion of "Demand Cost," it is evident that the demand rate is somewhat limited in its application unless demand charges are much lower than theory would call for. I be-

lieve the demand rate has its place in our rate structures, but not with the same importance as in the electric industry where competitive costs, in many instances, closely parallel those of central station power generation and distribution.

Demand rates are of importance in the sale of "Off Peak" service and, generally speaking, high load factor customers will accept demand rates; thus, this form of rate is useful as a method of classification.

Straight line rates and rates allowing discounts for increased consumption, which have the characteristics of step rates, are also in use to some extent and probably reflect competitive cost characteristics of solid and liquid fuels more closely than any other. However, the step rate has been disapproved by some Commissions because, under certain conditions, customers may waste gas in order to lower their bills.

It has recently been suggested that increased flexibility and market coverage can be obtained if rates are made for each type of gas-fired equipment in the customer's plant. So far, only a few gas companies have adopted this so-called "Purpose Type" rate, but they report that additional sales have been secured as a result of its application to their particular problems.

An interesting feature of this rate is that the size of the initial block of gas is expressed in terms of the physical characteristics of the customer's gas-fired equipment, such as tons per hour, square feet of radiation, horse power of boiler rating, square feet of baking area, etc. These are terms with which each individual customer is familiar, and, in addition, provide a basis for rate determination which recognizes both value and cost of service.

While it is too early as yet to say that the "Purpose Type" rate will ultimately become a recognized and valuable addition to our rate-making activities, it is at least indicative that new rate forms are constantly being considered in order that we may keep step with the requirements of our industry.

In conclusion, may I repeat that close cooperation between the sales and rate departments is essential at all times because the industrial load is constantly changing. The rate engineer must rely on the industrial gas engineer for much of the information needed to devise practical rates which will meet new conditions as they appear. I am sure that both will do their part.

INDUSTRIAL & COMMERCIAL NATIONAL ADVERTISING FOR APRIL

The Advertising Committee of the Industrial Gas Section, J. P. Leinroth, chairman, and F. B. Jones, vice-chairman, announces that full-page advertisements will appear in the following trade and business magazines during the month of April:

Magazine	Date	Topic
American Restaurant	April	Gas for Commercial Cooking
Bakers Helper	April 15	Improved Bake Ovens
Bakers Weekly	April 8	Improved Bake Ovens
Ceramic Industry	April	Gas in the Ceramic Industry
Food Industries	April	Gas for Heat Processing of Foods
Hotel Management	April	Gas for Commercial Cooking
Industrial Heating	April	Gas for Heat Treating Metals
Iron Age	April 27	Gas for Heat Treating Metals
Metal Progress	April	Gas for Heat Treating Metals
Metals and Alloys	April	Gas for Heat Treating Metals
Modern Beauty Shop	April	Gas for Heat Treating Metals
Modern Hospital	April	Gas Hair Dryers
Steel	April 24	Gas for Commercial Cooking
		Gas for Heat Treating Metals

Commercial Gas Sales Conference in May

HOTEL, restaurant and commercial gas sales will be analyzed and discussed by experts at a conference sponsored by the Industrial Gas Section, which will take place May 22 and 23 at Hotel St. George, Brooklyn, N. Y. F. T. Herty, of The Brooklyn Union Gas Company, who is in charge of the conference, promises a program of wide appeal, so make your plans now to attend. Further details will appear in the next issue of the A. G. A. MONTHLY.

Famous Health Resort Uses Gas Fuel

WHILE gas fuel doesn't need any revitalizing or even a Spring tonic, it is firmly entrenched in one of the most famous health resorts in the country. One of the more recent and interesting uses to which gas fuel has been adopted is in the large bottling plant at the new Saratoga Springs health resort owned by the State of New York. The mineral waters used for medicinal purposes are bottled at this plant for distribution throughout the world.

There are two large bottling machines at this plant. One is capable of filling, carbonating and capping 3,000 bottles per hour of the natural medicinal waters from the carbonated springs. The other handles 500 bottles of five-gallon capacity per day.

Gas is used not only for supplying hot water to the bottling machines, but also for heating the plant building itself. In addition to this, gas fuel is used for heating the six other large buildings, including the Gideon Putnam Hotel, the Recreation Center, the Simon Baruch Research Institute, the Hall of Springs and the two Roosevelt Bath Houses. Gas is also used for supplying hot water for all uses to these buildings, including the bath houses.

Complete information on the use of gas at Saratoga Springs is contained in Interim Bulletin No. 3-FI prepared by the Food Industries Committee, Industrial Gas Section,

American Gas Association, T. W. Halloran, New York Power & Light Co., Albany, is chairman of the committee and G. J. Harrison, Central Hudson Gas & Electric Corp., Poughkeepsie, is vice-chairman.

Gas Speeds Printing of Magazine "Life"

DETERMINED to maintain a high quality magazine, printed on coated paper, the unprecedented success of *Life* and the tremendous and growing demand for copies, which has swelled to 1,400,000 today, posed a real "stopper" for the editors. Previous to the publication of *Life*, coated papers for magazines of over 200,000 circulation were unheard-of, because coated papers would not take inks fast enough to "back up" and fold at once.

An instant drying process had to be found, and was, with the help of gas. As the printed paper rolls off the giant presses at 700 feet a minute it passes over a special gas heating chamber. This chamber, generating from 1600° to 1800° F. is about five feet long, six inches high, and slightly wider than the printing plates. Direct flames strike the wet ink impressions, and a fraction of a second later the paper passes between water cooled rollers, the ink "sets," and the printed paper emerges with a dry, clear and unsmudged impression.

Gas Plays Conspicuous Part at Midwest Hotel Show

THE 1939 Midwest Hotel Show was held March 7-10, at the Stevens Hotel, Chicago. The Peoples Gas Light and Coke Co. of Chicago, and 14 leading manufacturers of commercial gas appliances participated in the show. Because it was conducted under the sponsorship of the Illinois Hotel Association and the Greater Chicago Hotel Association with the cooperation of the Chicago Restaurant Association and 9 surrounding state hotel associations, over 26,000 delegates arrived. A national flavor was lent to the combined effort by the concurrent convention of the Hotel Sales Managers Association.

Before this audience some 125 exhibitors, producing the almost countless goods and services which hotels must buy, staged a grand display in Exhibition Hall. Of those exhibitors, 15 showed modern commercial gas-burning equipment. That is, 12 per cent of the 1939 Midwest Hotel Show was a gas show.

The Peoples Gas Light and Coke Company's booth (in blue, canary yellow, and chrome) was used to exhibit special gas appliances of currently acute interest to hotel men—other than the standard full lines displayed in separate booths by such manufacturers as Detroit Michigan Stove,

Standard Gas Equipment, and American Stove. Pitco Frialators, Blodgett Deck Ovens, Savory Toasters, Cleveland Pressure Steamers, and Welsbach Counter Broilers were included in the utility's space.

Every type of gas cooking unit for hotel usage was on display somewhere at the show. Says one correspondent, "Volume gas cooking and baking appliances were conspicuous, predominant and well received by the large crowds that visited Exhibition Hall."

To get the gas story into the business program as well as the exhibition of equipment, T. J. Gallagher, manager, commercial sales department, The Peoples Gas Light and Coke Co., delivered an address during the Fuel Symposium held in connection with the convention of the Hotel Managers Association. He called particular attention to the most possessive advantage of gas—positive control—particularly for the attainment of wide flexibility in volume cooking performance. He also stressed the rapid strides made by the gas industry in recent years as regards the development of modern gas units, and emphasized the importance of the American Gas Association Testing Laboratories' work in this quarter.

GOING AHEAD with Industrial Gas

Both Ralph Hawkins (Non-Ferrous Metals Committee) and George O'Neil (Ferrous Metals Committee) are out to correlate all the technical and test data they can get on the generation and application of controlled atmospheres in their respective fields. If you have any atmosphere jobs, help the committees out by sending in descriptions, data, analyses, sketches, and results.

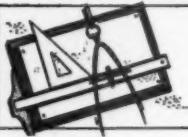
February issue of "Hotel Management" presented an intensive study of the food departments (including vast kitchens) of the Statler Hotel in Boston. Among other gas equipment, the batteries of ranges came in for flattering comment, such as, "Note excellent condition of equipment after preparation of several million meals." Did they say several MILLION? Yes, they said several million.

Congratulations to F. B. Jones on his appointment as general sales manager of Equitable Gas Co., Pittsburgh, Pa. "F. B." is a past chairman of the Industrial Gas Section and is at present vice-chairman of the Advertising Committee of the Section, which supervises the Association's non-residential national trade and business magazine advertising.

Hello! A new cartoon character pops up in non-residential gas advertising. He's a silk-hatted be-spotted gentleman assembled with a Stillson wrench who smiles at you from conical face of flame—and is known as G. A. Smain, the man about town. He sells gas to commercial establishments for Consolidated of Baltimore. If his sales record is as brilliant as the words put into his mouth by the direct-by-mail piece we have at hand, Baltimore's commercial load curve should look like the up-side of an Alp.

Bill Reimers' air conditioned fish smokehouse in Paterson, N. J. (noted last month) is creating quite a stir. "Business Week" (March 4) used our first write-up—with immediate results in inquiries from as far afield as Tacoma, Washington. "Food Industries" and "Heating Piping & Air Conditioning" have promised to follow up with more text, pictures and details.

A gold star for T. M. Brean, Industrial Division, Boston Consolidated! His paper on selling gas for commercial cooking was a prize winner in the recent Essay Contest of the New England Gas Association.



Technical SECTION

F. M. GOODWIN, Chairman
A. M. BEEBE, Vice-Chairman
H. W. HARTMAN, Secretary

Distribution Committee Presents Strong Program for Annual Conference April 17-19

A WELL-BALANCED program, filled with topics of vital interest to distribution men, has been arranged for the sixteenth annual Distribution Conference sponsored by the Technical Section of the American Gas Association. The conference will be held April 17-19 at the Palmer House, Chicago.

It has been several years since this conference has been held in Chicago and a large attendance is expected. Both manufactured and natural gas subjects are included on the program which has been prepared under the direction of Charles F. Turner, of The East Ohio Gas Company, Cleveland, who is chairman of the Distribution Committee.

Pipe Design Study

Those interested in cast iron pipe systems will have the opportunity of hearing a man well known in the industry discuss some of the fundamentals of cast iron pipe design. He will give detailed procedure and formulae for the design of pipe wall thickness for combinations of external load and internal pressure, methods of determining external loads due to back-fill and truck traffic, etc. Those who have been making an intensive study of the effects of frost, methods of blocking and service connections on cast iron pipe should be particularly interested in this paper. It represents a real advance in the scientific approach to pipe system design.

The Round Table discussions should be one of the highlights of the conference. Vice-Chairman Clarence Waring of Kansas City, well known by gas men everywhere, is planning four groups: (1) Construction, (2) Maintenance, (3) Servicing and (4) Meters and Metering. He has chosen as group leaders men who are well qualified to get the most out of each topic. They will be held, as in the past, on the afternoon of the first day, starting with lunch at 12:30 P.M. The number of suggestions which have been turned in to Mr. Waring indicate the interest in these informal gatherings. No notes are taken and everyone is encouraged to speak freely.

There has been a great deal of work accomplished during the past year by the several subcommittees. Their chairmen will present reports of these activities at the conference. Some of them will announce ac-

complishments already completed, others will tell of work recently started which will be of interest to all distribution and pipe line men.

The meter is the cash register of the gas industry and no program for distribution men would be considered complete unless it offered some contribution to the subject. This year's program is no exception. There is to be presented a paper which will show how the statistical treatment of meter repair records may be used to predict the proof of a meter several years in advance of the meter's return to the repair shop. This paper should be heard by everyone who is interested in improving his shop procedure and in anticipating his future shop facilities. The writer has very ingeniously used the data at hand and his approach to the subject is sure to bring forth many questions and arouse an interesting discussion.

Appliance Servicing Topic

Each year more and more attention is given to appliance servicing. This year an entire session will be devoted to papers and discussions on all phases of this important subject. The advent of the CP range has introduced new service and installation problems. A very interesting paper will describe what a group of utilities in one

of the state gas associations has done to meet the new conditions. A home service girl will tell what the housewife thinks of the gas company's service and what she expects of her gas appliances. This session should bring out many of the answers many are looking for on their servicing problems.

It is expected that there will be many natural gas men in attendance. A man from a large natural gas company will tell of his company's activities in promoting the use of gas "beyond the gas mains" by means of petroleum gases and of the part which such extended service can play in extending the company's service. Figures are given on cost of the distribution and the revenues which may be expected.

To Discuss Laboratories' Program

A member of the staff of the American Gas Association Testing Laboratories will explain "The Significance of the Laboratories' Appliance Approval Requirements to the Operating Engineer." The improvement of appliances has progressed so rapidly that it is difficult for the operating man to keep abreast of the changes in requirements which are constantly being made. This paper should help him to better understand the operation of appliances in the field and the conditions of gas service which he must maintain.

Cathodic protection of pipe lines is a subject which interests most natural gas men. There are many things about this form of protection which still puzzle the pipe line engineer. The instruments used for measuring currents are necessarily sensitive in order to register the minute currents used. A paper by Dr. Scott Ewing, research associate on pipe protection, will describe some of the things he has found about the measurement of cathodic currents and the instruments used.

The Palmer House has recently been equipped with year-round air conditioning. This is a subject which is always of interest to the distribution man and, while attending the conference, he will have the opportunity to see and study the equipment in the hotel. An inspection trip has been arranged with the hotel management, and there will be a representative of the manufacturer on hand to explain its construction and operation.

Following is the tentative program:

Joint Production and Chemical Conference

May 22-23-24, 1939

Sagamore Hotel
Rochester, N. Y.

This annual conference offers a wealth of information to the production and chemical men. Watch for the announcement of program details and other information on this three-day meeting you cannot afford to miss.

The Committee is planning a special surprise for Tuesday afternoon, May 23. Further details will appear in the next issue of THE MONTHLY.

MONDAY, APRIL 17, 10:00 A.M.

Opening Remarks, C. F. Turner, Chairman, Distribution Committee, Cleveland, Ohio. Welcome to Chicago, G. F. Mitchell, President, The Peoples Gas Light & Coke Co., Chicago, Ill.

Greetings, Alexander Forward, Managing Director, American Gas Association, New York, N. Y.

The Importance of Proper Servicing, T. J. Perry, The Brooklyn Union Gas Co., Brooklyn, N. Y.

Indiana Gas Association Servicing Committee's Preparedness Program on CP Gas Ranges (including tests at Purdue University), J. M. Pickford, Northern Indiana Public Service Co., Hammond, Ind.

Appliance Servicing from the Woman's Point of View, Jeannette Campbell, The East Ohio Gas Co., Cleveland, Ohio.

MONDAY, 12:30 P.M.

ROUND TABLE LUNCHEON CONFERENCES

1. Construction;
2. Maintenance;
3. Installation and Servicing Appliances;
4. Meters and Metering.

TUESDAY, APRIL 18, 10:00 A.M.

Rural Gasification Activities, J. Woodward Martin, Lone Star Gas Co., Dallas, Texas. Report of Committee on Pipe Coatings and Corrosion, A. V. Smith, Chairman, The United Gas Improvement Co., Philadelphia, Pa.

Half-Cells for Measuring Potentials in the Earth, Dr. Scott Ewing, Research Associate, National Bureau of Standards, Washington, D. C.

Significance of A.G.A. Requirements to the Operating Engineer, K. R. Knapp, A.G.A. Testing Laboratories, Cleveland, Ohio.

TUESDAY, 2:00 P.M.

Report of Memorial Committee, E. S. Umstead, Chairman, Providence Gas Co., Providence, R. I.

Report of Committee on Meters and Metering, A. W. Fuller, Chairman, Consolidated Edison Co. of New York, Inc., New York, N. Y.

A Method of Prognosticating Meter Errors, H. S. Harris, Southern California Gas Co., Los Angeles, Cal.

Inspection Trip To See Year-Round Air Conditioning System in Palmer House.

WEDNESDAY, APRIL 19, 10:00 A.M.

Report of Committee on Pipe Joints and Pipe Materials, L. W. Tuttle, Chairman, Public Service Co. of Northern Illinois, Oak Park, Ill.

Report of Committee on Cast Iron Pipe Standards, C. C. Simpson, Chairman, Consolidated Edison Co. of New York, Inc., New York, N. Y.

Discussion of the American Standards Association Law of Design for Cast Iron Pipe for Underground Service, W. D. Moore, American Cast Iron Pipe Co., Birmingham, Ala.

WEDNESDAY, 2:00 P.M.

Open Forum. Summaries of Round Table, Luncheon Conferences.

Proposed Method of Studying the Operation of a Carburetted Water Gas Machine



L. J. Willien

data are required:

1. Analyses of the following gases:
 - a. Blast gases from the top of the generator during the blow period.
 - b. Uprun blue gas from the top of the generator during the uprun period.
 - c. Backrun blue gas from the backrun pipe during the backrun.
 - d. Finished carburetted water gas at outlet of purifiers.
- The analyses should be made on samples representative of several runs, preferably two coaling periods. Procedure for taking these samples is outlined later on in the text.
2. Average rate of air to the generator during the blow and the length of the blow. If a blowrun is used the average rate of air to the generator and the length of the blowrun should be recorded.
3. Average steam rates during the up and backrun and the length of the up and backrun.

THE following, I believe, is a relatively simple and rapid method of studying the operation of a carburetted water gas machine. The method also offers the possibility of comparing the operations of two or more machines, or one type of operation with another.

The following

By LEON J. WILLIEN

Chief Gas Engineer, Public Utility Engineering and Service Corp., Chicago, Illinois

4. Temperature of the gases in the top of the generator.
5. Gallons of oil used per run.
6. Fuel charged to the generator.
7. The amount of carburetted water gas made during period over which gas samples and readings are taken.

The generator fuel charging door usually has an inch and a quarter or an inch and a half connection for a sight cock. This can be replaced with a short nipple with a tee through which can be inserted, into the top of the generator, a fire end of a pyrometer. The side outlet of the tee is bushed to $\frac{3}{8}$ " and a piece of $\frac{3}{8}$ " pipe, about 3 feet long, screwed into the $\frac{3}{8}$ " bushing. Place a $\frac{3}{8}$ " tee onto the end of the $\frac{3}{8}$ " pipe with two hose cocks. One hose cock is used for purging and the other for taking samples of blast gas and uprun blue gas. Connect to the hose cock, through which the gas samples are taken, a gas wash bottle with a rubber tube and connect the outlet of the wash bottle with a bag, such as used for bagging off gas mains. Nothing smaller than a 12" bag should be used.

During the blow period keep one hose cock wide open for purging purposes and collect the gas sample through the other hose cock, wash bottle and into the bag.

The rate of collecting the sample in the bag can be regulated by noting the gas bubbling through the water in the wash bottle.

The same connection to the generator can be used for sampling the uprun blue gas although a separate wash bottle and bag will be needed. The backrun gas can be sampled from the backrun pipe in the same manner through a wash bottle into a bag. In this way samples can be taken that will be representative of each run over two coaling periods.

The gases should be analyzed by the slow combustion method using oxygen. This applies especially to the samples of blast gases and particularly if coal is used for generator fuel. If a blowrun is used the blast gas sample should include the gas made during the blowrun period.

A sample of the finished gas taken at the outlet of the purifier immediately after taking the samples from the water gas machine should be representative of the gas made during the period the samples are taken from the machine.

From the data collected in the manner outlined the following information can be obtained:

Cu.ft. of blast gas per cu.ft. of generator air.
Generator air/M including blowrun.
Generator air/M used during blowrun.
Generator air, cu.ft./sq.ft. grate/minute.
% blowrun gas in finished gas.
B.t.u. of blast gas, uprun blue gas and backrun blue gas.

Steam, lb./M.

Cu.ft. of air/lb. steam.

Total and net heat developed in fuel bed during blow.

Total heat input to carburetor per gallon of oil.

% steam conversion.

The following illustrates an actual application of this procedure with an oil containing about 5% Conradson carbon. A 514 B.t.u. gas was made with 100% coal as generator fuel in an 8 ft. Semet Solvay Reverse Flow Machine.

Gas Analysis. Blast Gas.

Runs over which sampled.....	18
CO ₂	11.3
Ills.	0.1
O ₂	1.3
CO.....	13.4
CH ₄	2.0
H ₂	4.0
N ₂	67.9
B.t.u.	75.1
Cu.ft. of gas/cu.ft. gen. air*.....	1.16
* % N ₂ in air/% N ₂ in gas = cu.ft. gas/cu.ft. gen. air.	

Blue Gas.

	<i>Uprun</i>	<i>Backrun</i>
Runs over which sampled.....	13	18
CO ₂	3.9	5.2
Ills.5	.4
O ₂	1.1	1.2
CO.....	38.9	29.7
CH ₄	4.1	4.3
H ₂	45.5	55.2
N ₂	7.0	4.0
B.t.u.	320	322

Finished Gas.

CO ₂	5.5
Ills.	10.1
O ₂9
CO	22.5
CH ₄	13.2
H ₂	28.1
N ₂	19.7
B.t.u. Thomas Cal.	514

Operating Results.

Generator air/M including blow-run	685 cu.ft.
Generator air/M during blow-run	80 cu.ft.
Generator air, cu.ft./min./sq.ft. grate	108 cu.ft.
Gas made/run.....	5550 cu.ft.
% blowrun gas in finished gas.....	9.3
Steam, lb./M	27.4
Backrun steam, % of total steam	42.8
Cu.ft. of generator air/lb. steam	25.0
Oil used per run	16.4 gals.
Oil used per M.....	2.95 gals.
Fuel used, lb./M	22.8
Aver. temp. in top of generator	1027° F.

Net Heat Developed in Generator Fuel Bed during Blast/M Finished Gas

By CO ₂ formation (cu.ft. CO ₂ in blast gas/M × 452.5)	40750 B.t.u.
By CO formation (cu.ft. CO in blast gas/M × 126)	13400 B.t.u.
Total	54150 B.t.u.
Sensible heat in blast gases at 1027° F.	14750 B.t.u.
Net heat developed	39400 B.t.u.

Heat Input to Carburetor/M Finished Gas

Heat of combustion blast gases (685-80) × 1.16 × 75.1 ..	52650 B.t.u.
Sensible heat in blast gases	14750 B.t.u.
Total	67400 B.t.u.
Total/gal. oil	22850 B.t.u.
Coal gas in finished gas.....	6.9%
% steam conversion	55
Oil efficiency, B.t.u./gal.....	100500

The per cent of coal gas in the finished gas was calculated by assuming that 5.25 cu.ft. of 570 B.t.u. coal gas was produced per pound of coal used as generator fuel and that 58% of the coal gas was recovered in the finished gas. These figures were obtained from the Report of the A.G.A. Bituminous Coal Committee in the 1928 A.G.A. Proceedings.

The Oil Efficiency was calculated as follows:

CO ₂ in blast gas or blowrun gas was	11.3%
Blowrun gas in finished gas was	9.3%
CO ₂ in finished gas due to blowrun was (9.3% of 11.3)	1.0%
CO ₂ in finished gas was	5.5%
CO ₂ in finished gas due to blue gas (5.5 - 1.0)	4.5%
H ₂ in finished gas due to CO ₂ in blue gas (4.5 × 2)	9.0%
CO in finished gas by analysis.....	22.5%
H ₂ in finished gas due to blue gas (22.5 + 9.0)	31.5%
Blue gas in finished gas (4.5 + 22.5 + 31.5)	58.5%
Coal gas in finished gas.....	6.9%
Blowrun in finished gas	9.3%
Oil gas in finished gas	25.3%
B.t.u./M in finished gas due to blue gas	171,000
B.t.u./M in finished gas due to coal gas	39,000
B.t.u./M in finished gas due to blowrun gas	7,000
B.t.u./M in finished gas due to oil gas (514 - 217)	297,000
B.t.u./gal. (297,000/2.95)	100,500

The steam conversion was calculated as follows:

A pound of steam converted into CO and H₂ will produce 20.9 cu.ft. of CO. Converted into CO₂ and 2 H₂, a pound of steam will produce 10.4 cu.ft. of CO₂.

According to the above 1000 cu.ft. of finished gas contains 225 cu.ft. (22.5%) of CO and 45 cu.ft. (4.5%) of CO₂ due to the blue gas reaction. It will require 10.8 lb. steam to produce 225 cu.ft. of CO and 4.3 lb. to produce 45 cu.ft. of CO₂ or a total of 15.1 lb. per M of finished gas. Actually 27.4 lb. steam was used. Therefore 15.1/27.4 = 55% conversion.

A simpler way to calculate the steam conversion is to assume that with 100% conversion 40 cu.ft. of blue gas is made per lb. steam. Then 40 × 27.4 = 1096 cu.ft. of blue gas that should be made from 27.4 lb. steam. As a matter of fact only 585 cu.ft. of blue gas was made. Therefore 585/1096 = 53.5% which checks pretty well with the 55% conversion above.

It was calculated that the finished gas contained 58.5% blue gas which contributed 171,000 B.t.u. per M of finished gas, and 6.9% coal gas which contributed 38,000 B.t.u. From this the B.t.u. of the coal gas,

blue gas mixture leaving the generator can be calculated as follows:

$$585 \text{ cu.ft. of blue gas} = 171,000 \text{ B.t.u.}$$

$$69 \text{ cu.ft. of coal gas} = 39,000 \text{ B.t.u.}$$

$$654 \text{ cu.ft. of total gas} = 210,000 \text{ B.t.u.}$$

$210,000/654 = 320 \text{ B.t.u./cu.ft. of coal gas, blue gas mixture. The average B.t.u. of the blue gas samples taken as calculated from the analysis was 321.}$

The blue gas, coal gas and blowrun gas mixture was 292 B.t.u. and constituted 74.3% of the finished gas. If the blowrun is eliminated the 514 B.t.u. finished gas would contain 77% of 321 B.t.u. blue gas, coal gas mixture and 23% of 1170 B.t.u. oil gas (86 cu.ft./gal.). The length of the blowrun was 6 seconds.

If the blowrun is eliminated and the length of the blow is increased 6 seconds the net heat developed in the fuel bed should be the same as with a blowrun. If no change is made in the run part of the cycle, as far as steam used and time is concerned, the same amount of blue gas, coal gas mixture (321 B.t.u.) should be made or 654 cu.ft. per M of 514 B.t.u. finished gas made with a blowrun.

Since a 514 B.t.u. gas made without a blowrun will contain 77% of 321 B.t.u. blue gas, coal gas mixture, the amount of 514 B.t.u. gas made without a blowrun will be $654/77 = 850 \text{ cu.ft.}$ Eliminating the blowrun should therefore reduce the capacity 15%. The oil used/M should be 230/86 or 2.68 gals./M or about 9% less and the fuel per M should be 26.8 lb. or 15% more than with a blowrun.

Coordinating Committee To Study Corrosion

A NUMBER of technical societies and other organizations engaged in the study of corrosion, including the American Gas Association, have joined in forming the American Coordinating Committee on Corrosion, which is to serve as a clearing house and coordinating agency for information on experience and work in progress in the field of corrosion and corrosion prevention.

A. V. Smith, of The United Gas Improvement Co., Philadelphia, who represents the American Gas Association on the Committee, was appointed chairman of the Committee on Review of Reports. Members of the Association are requested to forward to Mr. Smith the names and addresses of organizations and people working in the field of corrosion in this country, together with information as to their special interests and their current programs.

The next meeting of the main committee will be held in June at Atlantic City, N. J., during the A.S.T.M. annual meeting, at which the information thus far compiled will be reviewed, permanent organization effected and the work of the committee further considered. Pending permanent organization C. L. Warwick, secretary-treasurer of the American Society for Testing Materials, is serving as temporary chairman of the committee.



Laboratories

N. T. SELLMAN, Chairman, Managing Committee

R. M. CONNER, Director

F. O. SUFFRON, Supervisor, Pacific Coast Branch



Figure 1—Feed end of gas cracking unit

By H. F. BUTZE

A. G. A. Testing Laboratories

SOME months ago the Testing Laboratories were faced with the necessity of providing a supply of manufactured gas for test purposes at Cleveland, due to a contemplated discontinuance of the gas formerly available. Coke oven gas having properties similar to the gas which had previously been supplied was specified in all of the American Standard approval requirements, it was felt highly desirable to provide a gas with comparable properties. The necessity of this was further confirmed by the recent test gas investigation which showed conclusively that the burning characteristics of coke oven gas make it indispensable for testing appliances for nationwide distribution.

In preliminary consideration, attention was given to transporting coke oven gas from a local steel plant in high pressure cylinders or special containers. Thought was also given to reforming natural gas in a small oil-gas or water-gas generator and to subsequent mixing of the reformed product with natural gas and possibly with other purchased gases. In addition a study was made of the possibilities of employing a single shell water-gas generator of con-

Testing Laboratories Now Produce Synthetic Coke Oven Gas

ventional design and utilizing an incandescent coke fuel bed.

The most attractive method of the several considered seemed to be the use of some continuous process utilizing natural gas for heating purposes. Considerable experimental work on the thermal decomposition of hydrocarbons has been conducted by various investigators. A summary of this work and appropriate references may be found in Gas Engineers' Handbook, page 347 to page 353. This process, known as pyrolysis of natural gas, involves application of heat for breaking down of hydrocarbons into, principally, hydrogen and the paraffin and olefin hydrocarbons.

For the purposes of synthesizing a coke oven gas it was essential to obtain a mixture composed predominantly of hydrogen and carbon monoxide and high in hydrogen. As a consequence, it would be necessary with

the continuous cracking process to introduce water (steam) to obtain a water-gas reaction with the remaining hydrocarbons. Analysis of pertinent literature indicated the feasibility of producing in this manner a cracked gas of the desired composition by controlled conditions of temperature.

In principle, at least, this method appeared to be workable and at the same time possess certain advantages for the purposes desired. The more important of these would be the ability to maintain equilibrium conditions with resultant uniformity of product, compactness, and elimination of fuel storage and ash disposal facilities.

It was found that the Surface Combustion Corporation was constructing a gas cracking machine which its engineers felt would meet all of the requirements. Available data were obtained from this company on the operation of its set and the characteris-

TABLE I
ANALYSIS AND PROPERTIES OF NATURAL GAS, CRACKED GAS, SYNTHETIC COKE OVEN GAS, AND A TYPICAL COKE OVEN GAS

Constituent Per Cent by Volume	A		B	C	D		
	Natural Gas	Cracked Gas		Synthetic Coke Oven Gas	Typical Coke Oven Gases	D ₁	D ₂
CH ₄	83.0	1.9		22.66	27.7	29.80	
C ₂ H ₆	16.0			4.10	III. 3.3	3.15	
CO			23.8	17.70	6.8	6.95	
H ₂			72.0	53.55	52.10	50.15	
N ₂			1.2	1.17	7.9	7.50	
CO ₂		1.0					
			1.1	0.82	2.2	2.45	
Heating Value	1127	330		534	542	551	
Specific Gravity	0.64	0.32		0.404	0.409	0.470	

TABLE 2
EFFICIENCY OF CONVERSION

	Cu.Ft. Per Hour	Heating Value B.t.u. Per Cu.Ft.	B.t.u. Per Hour
Heating Gas	404	1127	456,000
Make Gas	114	1127	128,000
Natural Mixing Gas	160	1127	180,000
Total	678	764,000	764,000
Final Gas	625	534	334,000
Efficiency = $\frac{334,000}{764,000}$		= 44 per cent	

tics of the cracked gases it was capable of producing.

A general view of the front of the unit as installed is shown in Figure 1 and a rear view appears in Figure 2. Its construction employs a steel shell heavily lined with fire-brick. The unit is divided into an upper and a lower section, each being heated by two batteries of burners. A battery consists of a single atmospheric type injector and mixer which supplies a combustible air-gas mixture to seven lava tip burners.

The injector is capable of injecting all the air necessary for complete combustion as primary air and hence no provisions are made for secondary air. This injection is made possible through the use of high pressure gas which reaches the orifice at a pressure of 20 lbs. The temperature of each section of the furnace is controlled by an automatically recording pyrometer which in turn actuates a motor valve. A series of vertical flue passages provide for venting of the flue gases.

Cracking of the gas is accomplished in six 3-in. alloy steel tubes which extend horizontally through the furnace, three in each section. All tubes are supplied with low pressure natural gas from a common line, the flow being controlled by a differential pressure regulator and measured by an orifice meter.

Each tube has a shut-off valve at both the inlet and outlet end so that it may be dis-

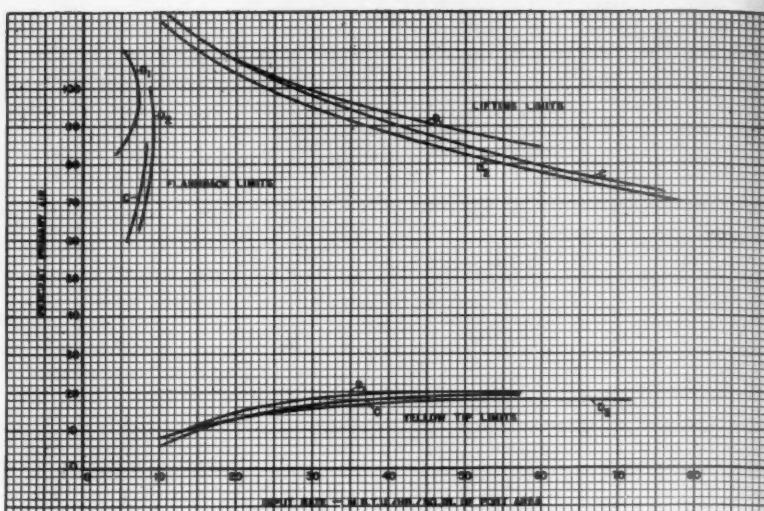


Figure 3—Comparative burning characteristics of the synthetic and typical coke oven gases

connected from the system for cleaning etc., without shutting down the entire system. At the inlet of the furnace is a water manifold which feeds water necessary to complete the reaction to the tubes at an accurately controlled rate. Inside the 3 in. tubes are placed 12 ft. sections of 2 in. and 1 in.

black iron pipe (one within the other) which serve to increase the total heat transfer surface and also catalyze the reaction.

The cracked gas is collected by a common manifold and then passes through a coil of about 50 ft. of 2½ in. pipe having a slight downward pitch. This acts as a cooling coil and also serves as a means of condensing out any excess water vapor and other condensable vapors before the gas reaches the filters. (These consist of two parallel cylinders filled with steel wool.)

The cracking process takes place at a temperature of about 1800° F. After the furnace has been heated to this temperature and equilibrium secured, gas and water are admitted to the tubes and the cracking process started. The cracked gases are allowed to escape to the atmosphere through a purge line. After about half an hour a sample of the cracked gas is taken and analyzed for CO₂, illuminants, CO, H₂ and CH₄.

If this analysis gives the proper results, natural gas is added to the cracked gas to enrich it to the desired composition. The rate of flow of enriching gas also is controlled by an orifice meter and a differential pressure regulator. A sample of the mixed gas is then analyzed as a check. If satisfactory, the purge line is closed and the mixed gas is passed into the holder for storage.

Pressure gages are located in various parts of the system and these gages are checked periodically to insure that there is no excessive pressure building up in any part of the unit. There are also several drop legs in different parts of the manifold which must be drained occasionally to rid the piping of any condensate that may collect.

After several runs have been made, the tubes are opened at both ends and cleaned by blowing compressed air through them. Whether the tubes need cleaning or not can usually be determined from two factors. If the pressure in the tubes builds up ex-

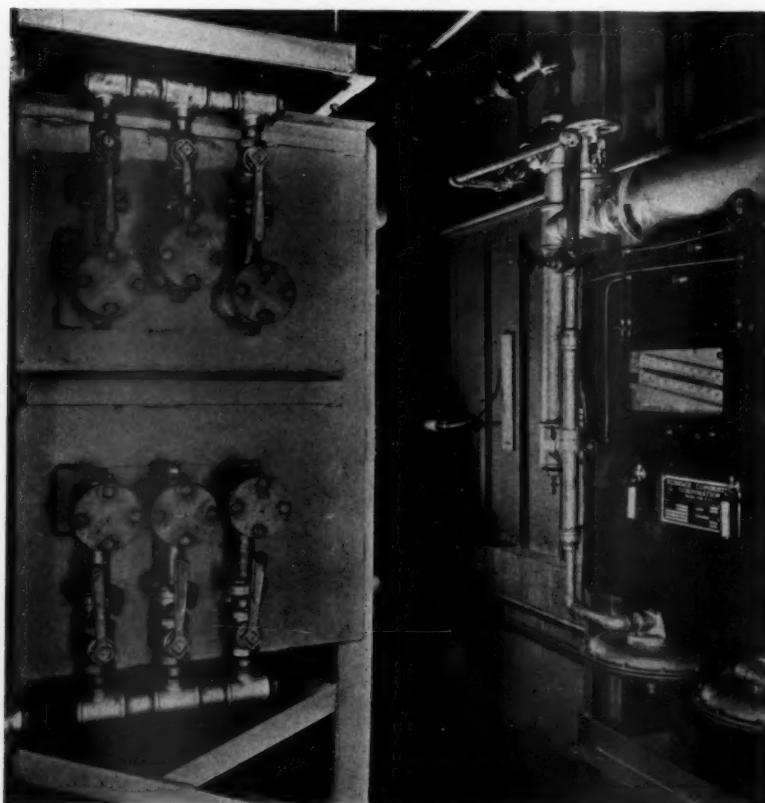


Figure 2—Discharge end of gas cracking unit

cessively, it is probable that they are partially blocked off with carbon and need cleaning. Also if the analysis of the cracked gas shows a high percentage of methane (and thus incomplete cracking), it may be concluded that the tubes require cleaning.

A typical analysis of the natural gas used for both heating and make purposes is shown in column A, Table 1. An analysis of the cracked gas which has been consistently obtained is given in column B of the same table. The composition and properties of a typical mixture of this cracked gas and the natural gas appear in column C, and for comparative purposes the analysis of actual coke oven gases similar to that previously supplied to the Cleveland Laboratories is presented in column D.

It will be noted from Table 1 that the synthetic coke oven gas and the actual coke oven gases have practically the same heating values and specific gravities. There is some variation in chemical compositions although these largely compensate for each other since the burning characteristics of the three gases are quite comparable.

The comparative burning characteristics of these three gases are revealed by the characteristic lifting, flash-back, and yellow tip limit curves for each shown on Figure 3. These data were obtained from the A.G.A. Precision Burner recently developed by the Testing Laboratories.

Comparison of these curves show that so little difference exists between the three gases that it can be neglected for all practical purposes. This is indicated by the fact that the curves for the two coke oven gases (identified by D₁ and D₂) differ more than the curves for either one and the synthetic coke oven gas (curve C). Over a period of time, the composition of coke oven gas which had been supplied to the Laboratories varied more than do the two gases (D₁ and D₂) shown in Table 1 and Figure 3.

Although the cracking set has now been used in the production of about 50,000 cubic feet of coke oven gas, data on the efficiency of conversion and general economics are still too meager to permit final conclusions to be drawn. However, the following information may have some value and is at least approximately indicative of the actual performance. Table 2 gives data for a run after the set has been brought up to temperature. These results indicate that after equilibrium has been attained (neglecting gas for preheating) a conversion efficiency of about 44% is obtained. The actual efficiency under the Laboratories' operations is somewhat less than this due to intermittent nature of operation and the necessity of using a purge cycle so that the desired uniformity may be obtained.

WEST COAST SHOWMANSHIP

(Continued from page 141)

The two kitchens installed by the Whitehead Metal Company glisten with Monel and pastel tile and inevitably draw the attention of both feminine and masculine visitors, who



Courtesy Southern Union News
How not to become a success—in one easy lesson

have become kitchen conscious after a tour of the bungalow devoted to kitchen planning, and a leisurely inspection of the kitchen therein. (Pictures of these kitchens were not available at time of going to press but will be featured later—Editor.)

The last word in CP gas ranges, water heaters, refrigerators, floor furnaces and winter air conditioning systems may be studied at one's ease, with explanation and demonstration by members of the reception staff.

There are two basement hobby rooms, —homey yet a bit luxurious and beckoning because of the cushioned wall seats covered with crimson leather—and the welcoming gas heat. Here the weary visitor may sit and relax muscles tensed from the chill which at this early date pervades these colossal exhibit buildings. Such relaxation naturally turns the mind upon the comfort and advantages of automatic gas heat.

Personality-plus is the keyword of the reception staff—a group picked for intelligence and geniality. The young women are dressed in simple pastel frocks of the sports type, while the young men are uniformed in a formal daytime style of grey trousers and oxford jackets. Every member of the staff wears an embroidered badge with a gas flame and the words "The Modern Fuel."

The romantic Spanish atmosphere of Gas Exhibits attracts not only visitors but entertainers of the Exposition Company. A quartet of Mexicans in native dress, aware that this is their best and most special setting, wander in frequently. One of the señoritas breaks into a lovely liquid stream of

song while the other one skims along the floor in a whirling fantasy of form and color, to the strains of a Spanish guitar.

Much that is seen and heard in the innumerable exhibits at Treasure Island becomes either a blur or a faded impression when the day is over. Gas Exhibits lingers, as all romance and beauty linger in the heart, mind and eye—wistfully enduring.

SALES SYMPOSIUM

(Continued from page 133)

story strongly in large space and an extensive schedule. Local testimonials were used in this campaign.

With the advent of CP ranges in the Fall an announcement campaign spread the new CP facts with enthusiastic emphasis on this revolutionary boon that had come to the gas business—and to the housewife.

In all these campaigns, of course, many other media—such as house organs, truck posters, floor and window displays, employee merchandise-prize contests, bill-stuffers and other direct mail—were used.

Appliance Sales Increase

Our total appliance unit sales show an increase of 2% over 1937 with increase in major appliances such as ranges, 7%; retail refrigerators, 4%; automatic water heaters, 18%; and central heating, 27%. There is no question but what the sales policies used played an important role in this achievement.

In the domestic field, retail prices were revised so that instead of selling on a "deliver only" basis with connections extra (individual in each case), we added an average connection charge to the "deliver only" price and sold on an "installed" basis. This method has enabled the salesman to speed up the sale, so to speak, by eliminating the necessity of obtaining an individual connection quotation.

An important item in connection with our sales organization is the division of our domestic salesmen into two classes or major groups. One group sells ranges and refrigerators while the other sells water heating and space heating. Each major group is subdivided into groups containing six to

seven salesmen headed by a sales supervisor. This arrangement makes for better campaign results and has proven of definite value.

An optional-lease plan on conversion burners was adopted for residential central heating. This plan provides, in effect, an opportunity for the customer to rent a conversion burner for \$43 for one heating season, at the end of which he may either purchase the burner or have it removed. The \$43 consists of a \$25 down payment (prior to Fall) and nine monthly payments of \$2 each, starting with September. In the event of removal no refund is made.

Kitchen heating occupies a prominent place in our general sales policy. In this connection we stress the sale of kitchen heating ranges, particularly in combination with a conversion type automatic water heating unit, making a special price for the combination sale.

It has been our practice for some time to work co-operatively with the dealers, assisting them in their direct sales effort and providing a prospect commission on sales resulting from leads which they furnish. In addition, practically all of our appliance installation work is done by plumbers and heating contractors. As a result of this policy, the direct sales to dealers for 1938 amounted to \$178,000 with 1990 units and the sales made through dealers' leads amounted to \$102,000 with 829 units.

New home construction is actively followed by the special salesmen comprising our Builder Division. Personalized letters with enclosures of gas equipment literature are sent to all prospective home builders, both contract and speculative. These letters are closely followed by personal calls. Of the approximately 1000 new homes built in 1938, 90% were equipped with gas ranges, 11% with refrigerators, 26% with water heaters and 20% with central heating.

We have a sub-division of our Builder Division consisting of four salesmen who contact the apartment house owners and operators. To this division are allocated all dwellings, new and old, containing four or more suites where heat is supplied, "group-adjoining" apartment houses irrespective of the number of suites and Government housing projects.

GASCO INSTALLATION GUIDE

(Continued from page 138)

Copy of Specification Form.

Drawings showing Structural Details for Good Duct Work Practice.

As has already been mentioned the Guide represents best practice and not minimum standards. There is, however, room for a lower set of standards to take care of low-priced speculative houses.

At first the idea of a double standard may seem incongruous and unnecessary, but to many such a procedure will offer the most logical solution. In the first place the Guide is written in "should" and "would" language. There is no attempt to "demand" anything on the part of the gas company—rather it recommends. As a matter of fact a form has been furnished for compromises where they are agreed upon by the contracting parties. But on those items where safety and a reasonable

amount of comfort are at stake, there can be no compromises.

Such decisions as to whether to use a clock or manual thermostat, insulate duct work, put canvas connections in trunk lines, noise and many others, are items on which compromises may be made and the user may still have a reasonably comfortable home. But such decisions as sizing the unit, care in its erection, ample supplies and returns, adequate dampers, etc., are "must" items on which no compromises should be made.

These "must" items can best be covered by a "Code of Minimum Requirements" which should be enforced by the utility under penalty of withholding free service from installations not meeting these minimum requirements.

Such a Code of Minimum Requirements has been drafted by the New Jersey Gas Association and copies are available by addressing the Secretary, or the writer, at 80 Park Place, Newark, New Jersey.

Personnel Service

SERVICES OFFERED

Salesman—sixteen years' varied, intensive selling experience in responsible positions with three top-flight specialty manufacturers, contacting gas companies, jobbers and consumers. Traveled United States, widely acquainted with gas company officials. Excellent personal selling record. Organized and directed many sales operations. Outstanding talent is for successful sales promotion. Married, college graduate, 42. 1273.

Publicity Director, 70% releases accepted by newspapers, 1938 impacts total 64 million. Owe outstanding results to clear releases in simple language backed by broad engineering training and experience. 1274.

Combustion engineer—1937 gas engineering graduate—one and one-half years experience in Oklahoma refinery which included manual labor, pipe fitting, insulating, machine shop practice, surveying, drafting, first aid instruction and an introduction to the refinery operations. 1275.

Young man, experienced **technical service** work on gas equipment; specialized on conversion and designed house heating burners, know flue gas analysis, drafting, purchasing, estimating, billing, sales, and correspondence. Two years engineering college; want position with gas company or equipment manufacturer. 1276.

Graduate Engineer, experienced in the design, construction and operation of water gas plants, high pressure transmission systems, high and low pressure distribution systems. Recent experience in inventory, original cost, reproduction cost and continuing property records. Capable manager for medium size property. 1278.

Sales promotion, merchandising and advertising manager gas appliances. Last effort increased business 30 per cent. Diversified, intensive experience in creating campaigns, sales literature, sales and merchandising plans. Eastern city. Modest salary. 1279.

SERVICES OFFERED

Industrial, househeating, domestic sales or supervision, graduate engineer experienced in design, installation, selling industrial, house-heating and domestic equipment. Had charge of training men and several years of experience in natural and manufactured gas territories. Desire connection with a utility, appliance manufacturer or dealer. 1280.

POSITIONS OPEN

Salesmen—Eastern manufacturer wants representation throughout the country, preferably men calling on hotel and restaurant trade to sell new radiant conversion units for broilers and salamanders. Appliance endorsed by many users, approved and recommended by large gas utilities. Liberal commission. Correspondence confidential. 0330.

Experienced **sales executive** with company manufacturing gas appliances, for national distribution. Field selling experience and technical knowledge required. Substantial contacts with utilities and leading distributors essential. Application must contain personal history, experience and references. 0339.

Superintendent of manufacture for a carbureted water gas plant having a capacity of 14,000,000 cu.ft. 24 hours. Desire a man between 35 and 45 years old with thorough training and experience in the construction and operation of large carbureted water gas plants. In answering this notice, please give employment and qualification record as completely as possible. 0340.

Position open with company manufacturing gas appliances for competent executive to act as **Utilization Engineer**. Must be graduate engineer with sound experience in space heating and must have substantial contacts with utility companies. Complete history and references required with application. 0341.

1939 Advisory Council

F. M. BANKS.....	Los Angeles, Calif.	C. W. HUNTER.....	Philadelphia, Pa.
C. E. BENNETT.....	Pittsburgh, Pa.	F. A. LYDECKER.....	Newark, N. J.
C. W. BENNETT.....	Detroit, Mich.	R. L. MANIER.....	Syracuse, N. Y.
HOWARD BRUCE.....	Baltimore, Md.	D. H. MITCHELL.....	Hammond, Ind.
HALE A. CLARK.....	Detroit, Mich.	M. I. MIX.....	Chicago, Ill.
H. E. CLIFF.....	Newark, N. J.	WM. MOELLER, JR.....	Los Angeles, Calif.
H. C. COOPER.....	Pittsburgh, Pa.	B. J. MULLANEY.....	Chicago, Ill.
A. S. CORSON.....	Philadelphia, Pa.	JAMES F. POLLARD.....	Seattle, Wash.
HUGH CUTRELL.....	Brooklyn, N. Y.	J. V. POSTLES.....	Philadelphia, Pa.
ADDISON B. DAY.....	Los Angeles, Calif.	J. F. QUINN.....	Brooklyn, N. Y.
O. H. FOGG.....	New York, N. Y.	THOS. E. ROACH.....	Tacoma, Wash.
F. C. FREEMAN.....	Providence, R. I.	W. FRANK ROBERTS.....	Baltimore, Md.
JOHN A. FRY.....	Detroit, Mich.	J. F. Rooney.....	New York, N. Y.
C. W. GALE.....	Knoxville, Tenn.	F. M. ROSENKRANS.....	Kansas City, Mo.
R. W. GALLAGHER.....	New York, N. Y.	W. E. STEINWEDELL.....	Cleveland, Ohio
F. L. GRIFFITH.....	Chicago, Ill.	JOHN K. SWANSON.....	Saskatoon, Canada
C. A. HARRISON.....	Toledo, Ohio	J. B. TONKIN.....	Pittsburgh, Pa.
ROBERT W. HENDEE.....	Colorado Springs, Colo.	GEORGE E. WELKER.....	Oil City, Pa.
		P. S. YOUNG.....	Newark, N. J.

AFFILIATED ASSOCIATIONS

Association of Gas Appliance and Equipment Manufacturers

Pres.—E. R. Guyer, Cribben & Sexton Co., Chicago, Ill.
Exec. Sec.—C. W. Berghorn, 60 East 42nd St., New York, N. Y.

Canadian Gas Association

Pres.—T. P. Pinckard, United Gas & Fuel Co., Hamilton, Ont.
Sec.-Tr.—G. W. Allen, 7 Astley Ave., Toronto.

Empire State Gas and Electric Association

Pres.—E. P. Prezzano, Westchester Lighting Co., Mt. Vernon, N. Y.
Chairman, Gas Section—John J. Garland, The Brooklyn Union Gas Co., Brooklyn, N. Y.
Sec.—George H. Smith, Grand Central Terminal, New York, N. Y.

Illinois Public Utilities Association

Pres.—E. F. Kelly, Central Illinois Public Service Co., Springfield, Ill.
Sec.—Jack Abbey, Room 608, Illinois Bldg., Springfield, Ill.

Indiana Gas Association

Pres.—Dean H. Mitchell, Northern Indiana Public Service Co., Hammond, Ind.
Sec.-Tr.—H. Wayne Thornburg, Central Indiana Gas Co., Anderson, Ind.

Michigan Gas Association

Pres.—Arthur P. Eva, National Utilities Co. of Michigan, Benton Harbor, Mich.
Sec.-Tr.—A. G. Schroeder, Michigan Consolidated Gas Co., Grand Rapids, Mich.

Maryland Utilities Association

Pres.—R. C. Brehaut, Hyattsville, Md.
Sec.—W. D. Haley, 16 Carroll Ave., Takoma Park, Md.

Mid-West Gas Association

Pres.—S. D. Whiteman, Sioux Falls, S. D.
Sec.-Tr.—Roy B. Searing, Sioux City Gas & Electric Co., Sioux City, Iowa.

Missouri Association of Public Utilities

Pres.—Chester C. Smith, Kansas City Power and Light Co., Kansas City, Mo.
Sec.-Tr.—N. R. Beagle, Missouri Power & Light Co., Jefferson City, Mo.
Asst. Sec.—Jesse Blythe, 103 West High St., Jefferson City, Mo.

New England Gas Association

Pres.—R. J. Rutherford, Worcester Gas Light Co., Worcester, Mass.
Exec. Sec.—Clark Belden, 41 Mt. Vernon St., Boston, Mass.

New Jersey Gas Association

Pres.—B. A. Seiple, Jersey Central Power & Light Co., Asbury Park, N. J.
Sec.-Tr.—H. A. Sutton, Public Service Electric and Gas Co., Newark, N. J.

Ohio Gas and Oil Men's Association

Pres.—Warren E. Burns, Marietta, Ohio.
Sec.-Tr.—Frank B. Maullar, 811 First National Bank Bldg., Columbus, Ohio.

Oklahoma Utilities Association

Pres.—Glenn C. Kiley, Oklahoma Gas & Electric Co., Oklahoma City, Okla.
Sec.—Kate A. Niblack, 625 Biltmore Hotel, Oklahoma City, Okla.

Pacific Coast Gas Association

Pres.—H. L. Farrar, Coast Counties Gas and Electric Co., San Francisco, Calif.
Mang. Dir.—Clifford Johnstone, 447 Sutter St., San Francisco, Calif.

Pennsylvania Gas Association

Pres.—E. E. Mensch, Pennsylvania Power & Light Co., Williamsport, Pa.
Sec.—Frank W. Lesley, Pennsylvania Gas & Electric Co., York, Pa.

Pennsylvania Natural Gas Men's Association

Pres.—William H. Locke, United Natural Gas Co., Oil City, Pa.
Sec.-Tr.—B. H. Smyers, Jr., 435 Sixth Ave., Pittsburgh, Pa.

Southern Gas Association

Pres.—H. G. Bonner, Knoxville Gas Co., Knoxville, Tenn.
Sec.-Tr.—S. L. Drumm, New Orleans Public Service Inc., New Orleans, La.

Wisconsin Utilities Association

Pres.—Bruno Rahn, Milwaukee Gas Light Co., Milwaukee, Wis.
Exec. Sec.—A. F. Herwig, 135 West Wells St., Milwaukee, Wis.

AMERICAN GAS ASSOCIATION

HEADQUARTERS, 420 LEXINGTON AVE., NEW YORK, N. Y.

OFFICERS AND DIRECTORS

President	CONRAD N. LAUER	Philadelphia, Pa.
Vice-President	WALTER C. BECKJORD	New York, N. Y.
Vice-President	T. J. STRICKLER	Kansas City, Mo.
Treasurer	ERNEST R. ACKER	Poughkeepsie, N. Y.
Managing Director	ALEXANDER FORWARD	New York, N. Y.
Assistant Manager	H. W. HARTMAN	New York, N. Y.
Secretary	KURWIN R. BOYES	New York, N. Y.
Director, Publicity-Advg.	C. W. PERSON	New York, N. Y.
Director, Home Appliance Planning Bureau	J. W. WEST, JR.	New York, N. Y.
Sectional Vice-Pres.	H. A. EHREMMANN	New York, N. Y.
Sectional Vice-Pres.	F. X. METTENET	Chicago, Ill.
Sectional Vice-Pres.	FRANK H. TREMBLY, JR.	Philadelphia, Pa.
Sectional Vice-Pres.	MERRILL N. DAVIS	Bradford, Pa.
Sectional Vice-Pres.	T. R. WEYMOUTH	New York, N. Y.
Sectional Vice-Pres.	F. M. GOODWIN	Boston, Mass.

FRANK H. ADAMS	Toledo, Ohio	N. C. McGOWEN	Shreveport, La.
ARTHUR F. BRIDGE	Los Angeles, Calif.	GEORGE F. MITCHELL	Chicago, Ill.
C. M. COHN	Baltimore, Md.	F. A. NEWTON	New York, N. Y.
L. B. DENNING	Dallas, Texas	HENRY OBERMEYER	New York, N. Y.
W. E. DERWENT	Rockford, Ill.	CLIFFORD E. PAIGE	Brooklyn, N. Y.
H. L. DOHERTY	New York, N. Y.	FRANK H. PAYNE	Erie, Pa.
L. B. EICHENGREEN	Philadelphia, Pa.	W. T. RASCH	New York, N. Y.
H. L. FARRAR	San Francisco, Calif.	HERMAN RUSSELL	Rochester, N. Y.
C. E. GALLAGHER	Cleveland, Ohio	N. T. SELLMAN	New York, N. Y.
GEORGE S. HAWLEY	Bridgeport, Conn.	OTTO SNYDER	Albany, N. Y.
D. W. HARRIS	Shreveport, La.	MARCY L. SPERRY	Washington, D. C.
		WILLIAM G. WOOLFOLK	Detroit, Mich.

SECTION OFFICERS

ACCOUNTING—Chairman	H. A. EHREMMANN	New York, N. Y.
Vice-Chairman	F. B. FLAHIVE	New York, N. Y.
Secretary	H. W. HARTMAN	New York, N. Y.
COMMERCIAL—Chairman	F. X. METTENET	Chicago, Ill.
Vice-Chairman	DAVIS M. DEBARD	New York, N. Y.
Secretary	J. W. WEST, JR.	New York, N. Y.
INDUSTRIAL GAS—Chairman	FRANK H. TREMBLY, JR.	Philadelphia, Pa.
Vice-Chairman	FRANKLIN T. RAINES	Columbus, Ohio
Secretary	EUGENE D. MILENER	New York, N. Y.
MANUFACTURERS—Chairman	MERRILL N. DAVIS	Bradford, Pa.
NATURAL GAS—Chairman	T. R. WEYMOUTH	New York, N. Y.
Vice-Chairman	ELMER F. SCHMIDT	Dallas, Texas
Secretary	E. H. POE	New York, N. Y.
TECHNICAL—Chairman	F. M. GOODWIN	Boston, Mass.
Vice-Chairman	A. M. BEEBEE	Rochester, N. Y.
Secretary	H. W. HARTMAN	New York, N. Y.

A. G. A. TESTING LABORATORIES—1032 East 62nd Street, Cleveland, Ohio 718 Towne Avenue, Los Angeles, Calif.	
Chairman, Managing Committee	N. T. SELLMAN
Director	R. M. CONNER
Supervisor, Pacific Coast Branch	F. O. SUFFRON

WASHINGTON OFFICE:

George W. Bean, Fuel Consultant, Albee Bldg., Washington, D. C.

